Basic Arithmetic In Geometry

By
John Clark

John 312

Basic Arithmetic In Geometry Language

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Monday, December 31, 2018

Arithmetic is a logical system of grammar while Geometry is an analogical system of grammar. I generally use the name Basic Analog Grammar, however most people would not know what that means; suffice it to say, the mind is a life support system of our body and as such has a well defined and biologically determined job to perform and well defined means of doing that job, language as a binary expressed in every possible grammar system.

Currently there are no correct grammar books on the planet and everyone believes that the mind processes information in countless ways. All they have to do is ask their computer, is all information processed in binary? Plato actually answered that question and called the effect as applied to all thought, dialectic, thinking, reasoning, speaking, by two's; the elements of every thing.

Everything is composed of some material difference within limits; this means that everything is expressible, as the early Greeks were doing, as a binary expression which is the same concept used for the terms assertion and denial, and *is* and *is not*. Plato even called grammar systems dialectical because of that; we are always speaking in accordance with these two primitive concepts afforded to us by Language and expressed in grammar. These two elements of any thing afford us even two categories of grammar, logical and analogical. Arithmetic is a logical grammar, common grammar is a logical grammar and algebra is a logical grammar. Geometry, on the other hand, is an analogical grammar; it is a pure analogical grammar.

Every system of grammar is a method of utilizing the binary of Language. Grammar systems are produced by the recursion of the binary of language by its application to symbol sets for the absolute and relative. Simple minded people imagine binary using symbols of only one binary grammar, 0 and 1, which is wholly devoid of the actual intelligible of elements of a thing being explored by some early Greeks and which is introduced in the Judeo-Christian Scripture in metaphor.

The mind is a life support system of a life form and like other life support system it processes what it has acquired from our environment in order to make products that maintain and promote our life. The area of the environment the mind evolves to deal with is an intelligible portion of the environment, time, past, present and future. As the most powerful life support system possible, it takes longer to evolve in a species, man is still evolving and this evolutionary process is indicated by man's own disunity. The mind of man, in general, is still very dysfunctional. As psychology is commensurate with the principles of language which are functionally resident in the mind, one can plainly view human insanity through all of human media.

The development of the human mind is also commensurate with the two elements of a thing, the absolute and the relative. Psychology is commensurate with the principles of Language which are functionally resident in the mind as grammar systems. This work is currently in edit mode; All of my work is aimed at psychology through language, as a biological fact of a sapient species, and grammar systems commensurate with the evolution of a species to become sapient.

Recursion

Monday, December 31, 2018

As there are only two parts of every thing, as Language, itself, is binary, every thing a mind does, it does in accordance with binary progression which is not only inherent in every thing, but as Language itself. In terms of grammar as derived from the intelligible of Language, I cannot agree with anyone who claims that there are more than two parts of speech, or that binary is different from binary. Nor can I agree with all of the Einstein's who claim that particular grammar systems, particular theories, over-ride simple basic grammar, in order to transport us and every thing else into mystical wonderlands. Binary cannot possibly be other than Binary. The only reason your computer would disappear off your desk is that some mental pervert probably stole it. Nor am I aware of anyone making tights for the computer or keyboard.

We have a host of synonyms for a thing. We call a thing a unit, a group, specific names, etc, but every thing is a binary construction of two elements, its shape, form, limits, etc. and the material difference within those limits. In common grammar we call the limit a container, and the material difference in that container, its material, or material difference, the contained; we also call them a noun and a verb. Every sentence construction, in every possible grammar can be said to be constructed of the recursion of a unit or of a noun and a verb. In geometry, they are called a point and a line. The only difference which the analog grammar of geometry brings to the table as a pure and perfect grammar system is that it pairs in a one-to-one correspondence the two elements of a thing by the motion of the hand. It cannot get any simpler than that. Geometry pairs the hand with the intelligible in a mind; therefore, if you imagine that there is any validity at all in so called non-Euclidean Geometry, then you actually believe that Euclid invented geometry, or pulled it out of his tush as ignorant mystics do. We live in a social construct which is reflective of the evolutionary development of mankind which means we live in a world of…. Geometry allows us to proof every possible logical construct and it affords us basic mental training in pairing reality to logical constructs. Grammar is to become understood as a Grammar Matrix which affords not only utility, but cross-checking and verification.

Recursion can be said to be just a synonym for repetition, and it is. If your computer whined about it, you would claim warranty service on it. However, we are not the only thing in the universe which repeats operations on things. A thing is a binary, and thus everything is constantly repeating that except, of course, dysfunctional minds. Thus recursion can be specific to a single simple relative difference, or it can be specific to a whole group of relative differences no matter how complex. When one comprehends the elements of a thing, what they can then surmise, is that all operations amount to producing more or less of some one thing; therefore recursion is always specific to some one thing, simple or complex; the complexity, however, does not change the fact that we are simply repeating something. We repeat a group of behaviors to construct some one thing, and if we are behaving in accordance with the definition of a life support system, that behavior will be in accordance also with our biologically defined job.

Recursion has, like most names, a whole basket overflowing with synonyms such as thinking, reasoning, planning, prophesying, predicting, seeking, etc. If one is really stupid, once again, they respond to names in accordance with expected social responses instead of the factual results of the things themselves.

Grammars, in order to be functional, depend on repetition, just like anything else, however, in a species not yet mentally functional this recursion is not taking place; minds quickly spiral off into the ozone or other chemically induced mystic realms and it is quite unaware that the product is simple gibberish. The entire planet at this point in our evolution is unable to distinguish the difference between gibberish and rational expression.

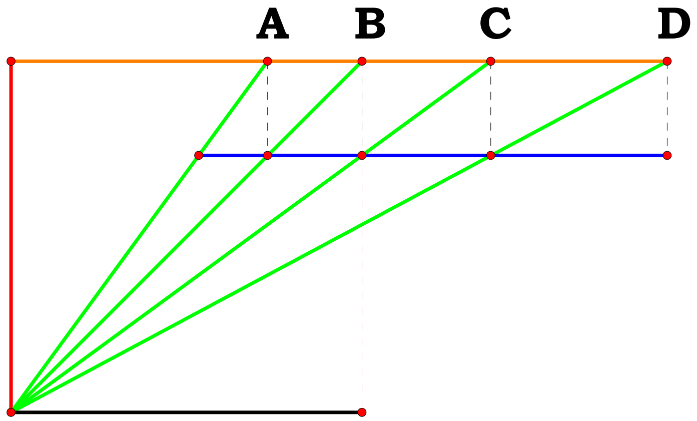
As every possible grammar is effected by the recursion of a unit, like everything else, then it becomes a matter of rational thought to start with the unit of grammar in terms of symbol sets and methods of indexing those symbols in order to construct the grammar. It then becomes a matter of intelligence to preserve these as absolute behaviors and methods of preserving these behaviors relative to the entire social structure which is not done today.

Proofing is a matter of double, and even triple, checking that a particular product in a specific grammar complies with the intelligible of Language which means that one can proof an analog in common grammar, arithmetic and algebra. Claiming that a proof is not valid, without denoting which grammar one has in mind for the pure and perfect grammar, which is factually expressed by geometry, is an argument of a fool. For example, the geometry I demonstrate can show the solution to any problem as long as one is satisfied with an arithmetic result. Every equation can be solved in geometry and arithmetic, but may be beyond the reach of our intelligence algebraically, due to complexity, or in common grammar, due to the common refusal to even agree upon any product of that grammar.

The first and foremost recursion which is required of any possible grammar, is one's own recursion in that grammar of the intelligible provided by language; unfortunately, for most people, this is not possible at this time in human history; this is an evolutionary product, not a grammatical one.

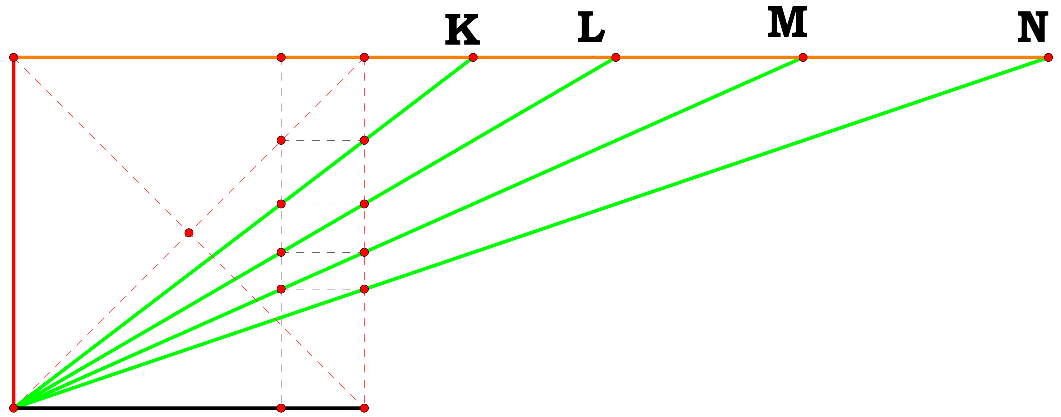
In geometry, many people believe that a circle and a line are fundamentally different, that writing the grammar using straightedge and compass mean fundamentally distinct tools. However, since every possible grammar is afforded by complete induction and deduction of a unit, a segment, people become quickly confused by such terse statements describing a circle. So, what I will do is show how with just straight lines, and the locus of where they are placed, produce a single equation which defines not only a circle, but also the ellipse. I am want that no one becomes a modern mathematician who uses such mythological terms as linear equations, trigonometric equations, and elliptical equations, as if an equation were something different from itself, that a figure is somehow different from a figure. Trigonometry actually predates formal geometry but still lives on with those too stupid to do the math. If we only have a unit, exactly how many geometries does that make? How many mathematicians does it take to fill a lead pencil? I will append Curve of the Equation to this section.

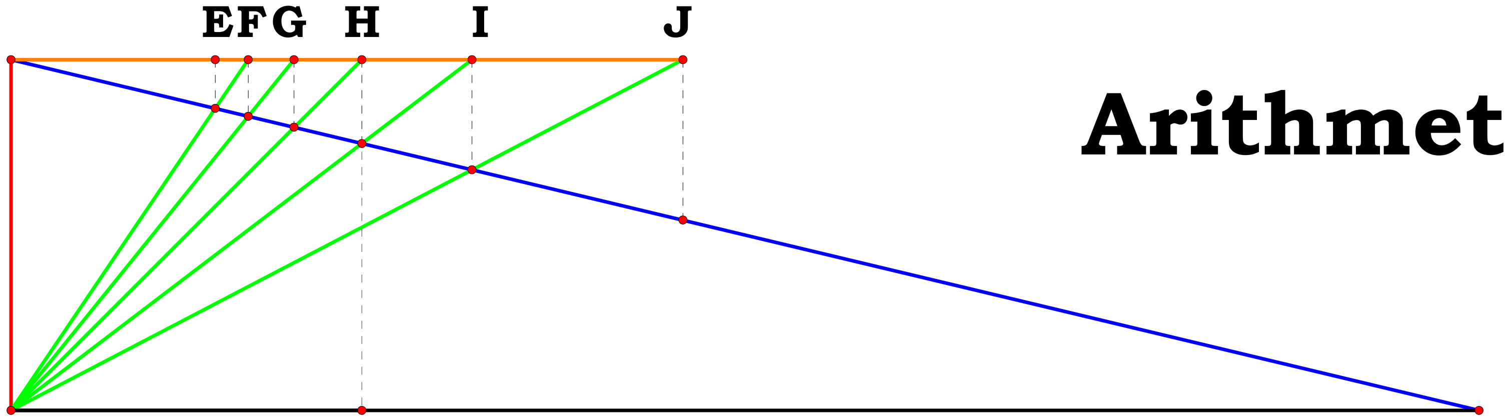
With stammering lips and another tongue I present Basic Analog Grammar, or if you prefer at this time, Basic Arithmetic in Geometry.



Geometric

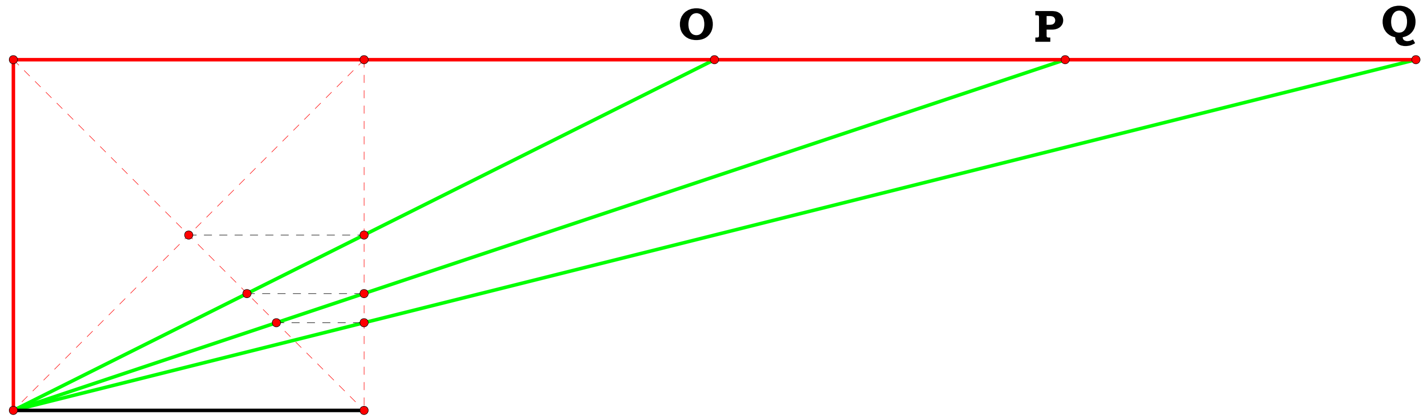
Exponential progression.





Fractional progression.

Arithmetic



Simple counting.

Curve of the Equation

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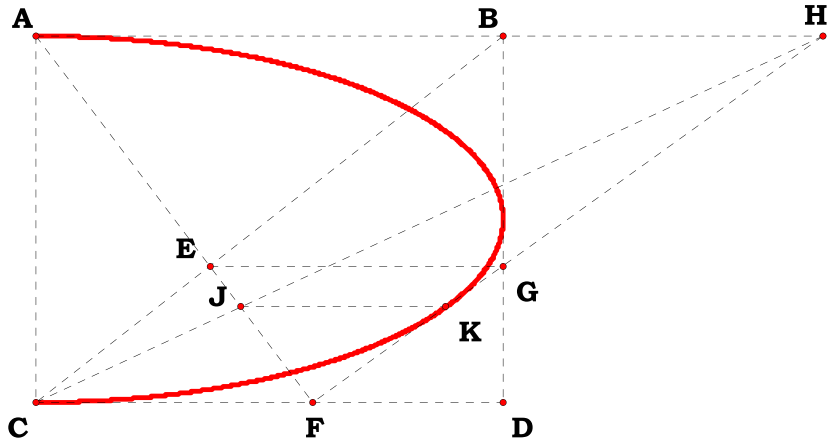
Explaining the figure:



Construct any rectangle ABCD. Join BC. Construct E anywhere on BC. Let AE pass to F and make EG parallel to AB. Let H be collinear with FG, and construct HC. Construct JK as was done with EG etc. K will be a point called a tangent. What the figure should tell you is that circles do not have centers, or ellipses major and minor axis. None of these things were required to construct the figure. One can then construct any three point circle as well as a three point ellipse; however, our method of construction does not mean that our behavior is definitive of the product.

One of the items, which Plato stressed, is that as we have only two concepts by which we standardize into grammar systems, it becomes a sloppy way of thinking when we are actually called the relative an absolute and an absolute a relative. When we say that the relative difference between any two terms cannot be predicated of either terms, we are simply going back to the two intelligible parts of any thing. How we construct a circle or an ellipse does not define it. Everything is defined in terms of a unit. Thus there are not many types of grammar based on intelligible of Language, they are based on standards of behavior we have found functionally advantageous.

Spelling the name cat no more makes a cat than drawing a circle or ellipse makes one.

The whole idea that one can make a new grammar, a new math, a new geometry by scribbling is wholly puerile and admiring such non-sensed is commensurable to that.

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Descriptions.

Unit.

$AB := 1$

Given.

$N_1 := 2$ $\quad BC := N_1$

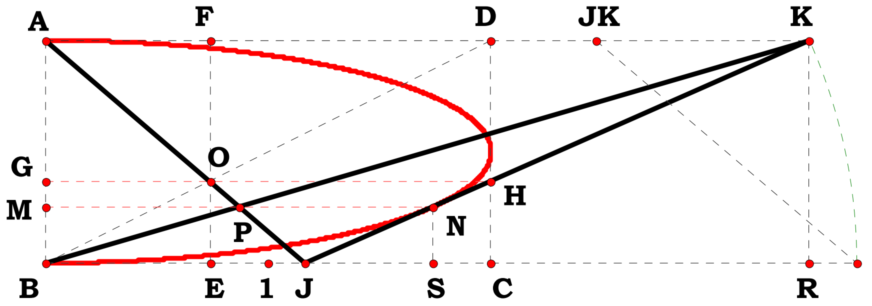
$N_2 := .73678$ $\quad BE := N_2$

$$EO := \frac{AB \cdot BE}{BC} \qquad BJ := \frac{BE \cdot AB}{AB - EO} \qquad AK := \frac{(BC - BJ) \cdot AB}{EO} + BJ$$

$$MP := \frac{AK \cdot BJ}{BJ + AK} \qquad BM := \frac{AB \cdot MP}{AK} \qquad JK := \sqrt{AB^2 + (AK - BJ)^2}$$

$$JR := \sqrt{JK^2 - AB^2} \qquad JS := \frac{JR \cdot BM}{AB} \qquad MN := BJ + JS$$

Curve of the Equation



BC = 2.00000 AK = 3.42901
BE = 0.73678 MP = 0.87041
EO = 0.36839 BM = 0.25384
BJ = 1.16652 JK = 2.47363
MN = 1.74082

Definitions.

$EO = 0.36839 \quad BJ = 1.166511 \quad AK = 3.429029 \quad MP = 0.870409$

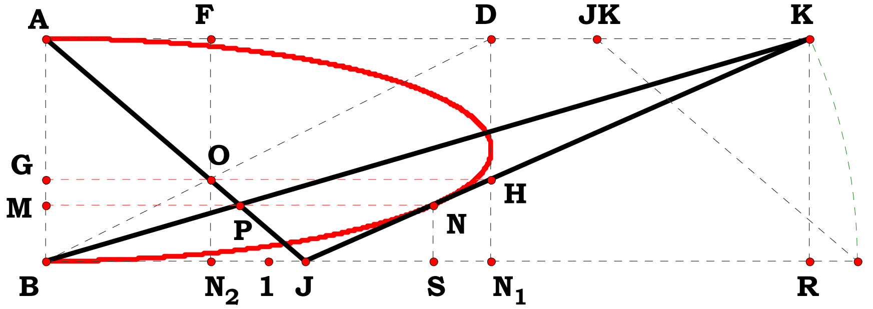
$BM = 0.253835 \quad JK = 2.473659 \quad MN = 1.740818$

$$EO - \frac{N_2}{N_1} = 0 \qquad BJ - \frac{N_2 \cdot N_1}{N_1 - N_2} = 0 \qquad AK - \frac{N_1 \cdot (N_1 - N_2)}{N_2} = 0$$

$$MP - \frac{N_1 \cdot N_2 \cdot (N_1 - N_2)}{N_1^2 - 2 \cdot N_1 \cdot N_2 + 2 \cdot N_2^2} = 0 \qquad BM - \frac{N_2^2}{N_1^2 - 2 \cdot N_1 \cdot N_2 + 2 \cdot N_2^2} = 0$$

$$JK - \frac{\sqrt{N_1^6 - 4 \cdot N_1^5 \cdot N_2 + 4 \cdot N_1^4 \cdot N_2^2 + N_1^2 \cdot N_2^2 - 2 \cdot N_1 \cdot N_2^3 + N_2^4}}{N_2 \cdot (N_1 - N_2)} = 0$$

$$JR - \frac{N_1^2 \cdot (N_1 - 2 \cdot N_2)}{N_2 \cdot (N_1 - N_2)} = 0 \qquad JS - \frac{N_1^2 \cdot N_2 \cdot (N_1 - 2 \cdot N_2)}{(N_1 - N_2) \cdot (N_1^2 - 2 \cdot N_1 \cdot N_2 + 2 \cdot N_2^2)} = 0 \qquad MN - \frac{2 \cdot N_1 \cdot N_2 \cdot (N_1 - N_2)}{N_1^2 - 2 \cdot N_1 \cdot N_2 + 2 \cdot N_2^2} = 0$$



$N_1 = 2.00000$ AK = 3.42901
$N_2 = 0.73678$ MP = 0.87041
EO = 0.36839 BM = 0.25384
BJ = 1.16652 JK = 2.47363
MN = 1.74082

$$\frac{2 \cdot N_1 \cdot N_2 \cdot (N_1 - N_2)}{(N_1^2 - 2 \cdot N_1 \cdot N_2) + 2 \cdot N_2^2} = 1.74082$$

$$\frac{2 \cdot N_1 \cdot N_2 \cdot (N_1 - N_2)}{(N_1^2 - 2 \cdot N_1 \cdot N_2) + 2 \cdot N_2^2} - MN = 0.00000$$

The Unit and Complete Induction and Deduction

Thursday, November 14, 2019

Every unit is binary which consists of a relative within correlatives. Each pair of terms, such as induction and deduction are referenced in terms of application.

What may be predicated of any thing is wholly determined by the definition of that thing. This could mean something as simple as a point is that which has no part, which is aimed at distinguishing the difference between the two elements of any thing, but when applied, fundamentally, one might like to reflect on its application to the notion of equality. We have two types, arithmetic equality and geometric equality. In some circles this means the difference between the letter of the law and the intent of the law, or again, the literal and the applicable. A literal mind does not function in accordance with good and evil, or meaning.

Arithmetic equality, or again absolute equality, is established as a one-to-one correspondence. This is used primarily in applying names what, for the most part, are wholly absolute except if you live in a proto-linguistic social structure as we do today. Geometric equality, or relative equality, is also known as proportional equality, algebraic equality, and even metaphor.

Metaphor is based on a simple physical and biological fact; it is based on the fact that we only have a very limited number of ways to measure any thing. While arithmetic equality is then based on the absolute, or the noun, geometric equality is based on the verb, or the relative difference. Simple minded folk, by nature, depend on arithmetic equality in names, associating learned social behaviors and their own emotions to those names instead of the actual relative difference; this is not reasoning, or does it produce rational behavior. It does make anyone's behavioral response to any particular thing incalculable, unless one has more data than a mind can hold.

Learning and teaching grammar as a matrix of binary expressions will eventually resolve the problem of human stupidity and irrationality; if man survives his insanity. I have it on very good authority, Dr Who, that human insanity is a constant so, why bother?

How a person behaves is wholly determined by how functionally literate they are. Literacy is not the ability to read books, but the ability to read and write the intelligible of Language. Language is Universal and Intelligible, while grammar is particular and perceptible. Every behavior of an animal is an expression of literacy. As a symbolic information processor, every possible behavior is a means of reading and writing. Only a very simple minded person believes that literacy has something to do with particular behaviors towards particular objects in the environment.

These two types of equality are also expressed by how one writes equations to any given figure in geometry. Algebraically, both types of equation give the exact same result, however, drawing the equation for its arithmetic counter-part and its algebraic counter-part are very different.

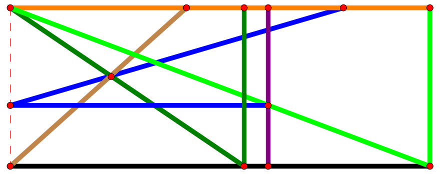
I break down the BAM Sample Dictionary, not included here, into a unit section, which displays both types of equations, but, due to the number of transforms of an equation, I have one section devoted to absolute transforms and one to relative transforms. The same is true of logical operators, absolute and relative. Adding wave samplers to the sample dictionary brings me to nine sections in that work which is still very far from being complete. That work is, however, helped by this introduction to BAG.

Grammar Resources

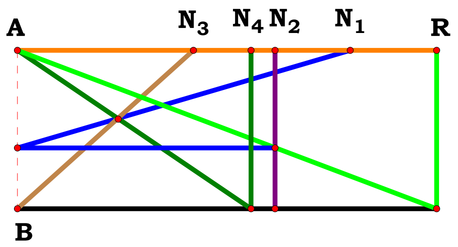
Thursday, November 14, 2019

Grammar can be seen as four distinct methods of binary addressing or as counting, all of it designed to do our job as a mind, the regulation of behavior in order to maintain and promote life. The mastery of our behavior is the first requirement to mastering the behavior of anything else; this makes grammar the most important thing possible as it is part of our definition as a mind. The mythology and disregard of grammar today is simply symptomatic of our stage of evolution.

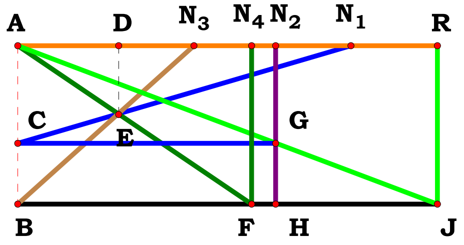
In every formal expression of grammar we pair logic with analogic, perception with conception. I am going to do a very concise summary of writing the logic to a simple analog, or glyph used in Jacob's Ladder.



As it stands we have no logical names for anything at all. To most it may appear to be some type of modern art or some meandering sketch. These sketches, however, do not just appear out of nowhere like words do that senseless men search histories and archaeologies for looking for meaning, as fact and as Plato affirmed, logical or analogical, names, in of themselves, have no meaning. One may as well ask a rock or tree what it means as a word; with one exception, a rock or a tree will always give you the same answer, not so man. We assert meaning as a means of doing our job as a mind; meaning is how we can profit by our behavior towards things.



We therefore apply logical names to the absolute portion of the analog. As the relative difference can be any relative difference what so ever, we are not getting into that at this time. We use either arithmetic names, such as 1, 2, 3, etc, common grammar names, such as A, B, C, or a combination, such as N_1. With these names we will start to construct Algebraic Names,



$N_1 = 2.10101$
$N_2 = 1.62626$
$N_3 = 1.11111$
$N_4 = 1.47475$
$R = 2.64325$

Unit. $AB := 1$ **Given.** $N_1 := 2.10101$ $N_2 := 1.62626$ $N_3 := 1.11111$ $N_4 := 1.47475$

Descriptions.

$$DE := \frac{N_3}{N_3 + N_4} \quad AD := N_4 \cdot DE \quad AC := \frac{DE \cdot N_1}{N_1 - AD} \quad R := \frac{N_2}{AC} \quad R = 2.643245$$

We start by pairing arithmetic names to common grammar names and then pairing the names of the points, also called nouns, from which we construct algebraic descriptions wholly formed by common grammar and arithmetic names. The end result will bring us back to a single name in common grammar and arithmetic. Common grammar uses relative naming while arithmetic absolute based on the indexing system. Combined they make an algebraic name. The equations, in each step of the process, are algebraic names, however, particular. As we accumulated names in common grammar and arithmetic, we now attempt an accumulative algebraic name, which, sometimes is too complex to do. In this case the resolution is:

$$\mathbf{R} - \frac{\mathbf{N_1 \cdot N_2 \cdot N_3 + N_1 \cdot N_2 \cdot N_4 - N_2 \cdot N_3 \cdot N_4}}{\mathbf{N_1 \cdot N_3}} = \mathbf{0}$$

This is how we show that our common grammar name, R, is equated by us to the Algebraic name we call an equation which is comprised wholly of our starting nouns. We see the Algebraic name still comprises nothing but nouns and verbs, absolutes, in terms of operations, and verbs in terms of our starting values as relative differences.

The above process is, however, only one method which is called arithmetic. Let us demonstrate it using geometric assignments. It will differ in this one respect.

$$\mathbf{N_u} := \mathbf{3} \qquad \mathbf{A} := \frac{\mathbf{N_u}}{\mathbf{N_1}} \quad \mathbf{B} := \frac{\mathbf{N_u}}{\mathbf{N_2}} \quad \mathbf{C} := \frac{\mathbf{N_u}}{\mathbf{N_3}} \quad \mathbf{D} := \frac{\mathbf{N_u}}{\mathbf{N_4}}$$

Every value is going to be relative to some given. This given can change all it wants, the results will not vary.

$$\mathbf{R} - \frac{\mathbf{N_u \cdot (C - A + D)}}{\mathbf{B \cdot D}} = \mathbf{0}$$

Notice that the equations do not look the same but are identical for the product.

$$\frac{\mathbf{N_1 \cdot N_2 \cdot N_3 + N_1 \cdot N_2 \cdot N_4 - N_2 \cdot N_3 \cdot N_4}}{\mathbf{N_1 \cdot N_3}} - \frac{\mathbf{N_u \cdot (C - A + D)}}{\mathbf{B \cdot D}} = \mathbf{0}$$

The first way that we did the equation, we call particular to some thing, the second method is universal. You can change N_u all you want but the answer will not vary at all. So what good is it? One can call it a zoom control. Unlike mystics who claim that nature makes laws, which mean that they have a grammar education better than man has ever devised, and that the Laws of Nature change in accordance to what one is writing about, or its appearance to some sense of the body, as if by some divine magic, our second equation states that no matter what we write about, great or small, bird, rock or man, the answer is going to be the same for the same means of measure. Thus, in writing the analog grammar to the algebraic logic, the first equation would have us chasing values so far off our starting page that we would often have to resort to satellite surveillance to find the end of it, while the second method can be used to change the scale, meaning any set of equations can always fit on a single page, well almost, it depends on how thick our pencil led is.

Every equation, absolute or relative, however, produces a relative result. What is an absolute result for an equation? It is called a logical operator; it produces only assertions and denials. Every possible equation can be also expressed as a logical operator.

Relative Logical Operators 1CST7R8

Descriptions.

$$\frac{A\cdot B\cdot(C+D)-B\cdot C\cdot D}{A\cdot C}=2.643245 \qquad Num:=\frac{A\cdot B\cdot(C+D)-B\cdot C\cdot D}{\sqrt{[A\cdot B\cdot(C+D)-B\cdot C\cdot D]^2}} \qquad Den:=\frac{A\cdot C}{\sqrt{(A\cdot C)^2}} \qquad L:=\frac{Num}{Den}$$

Definitions.

$$Num=1 \qquad Den=1 \qquad L=1$$

$$L-\frac{\sqrt{A^2\cdot C^2}\cdot[A\cdot B\cdot(C+D)-B\cdot C\cdot D]}{A\cdot C\cdot\sqrt{[A\cdot B\cdot(C+D)-B\cdot C\cdot D]^2}}=0$$

Thus one can formulate conditional statements by combining logical operators with other equations. Logical operators are used to find any result in accordance with some given.

And we can do the same for our second type of equation.

Unit. $AB := 1$ **Given.** $N_1 := 2.10101 \quad N_2 := 1.62626 \quad N_3 := 1.11111 \quad N_4 := 1.47475$

$$N_u := 3 \quad A := \frac{N_u}{N_1} \quad B := \frac{N_u}{N_2} \quad C := \frac{N_u}{N_3} \quad D := \frac{N_u}{N_4}$$

Absolute Logical Operators 1CST7R8

Descriptions.

$$\frac{N_u \cdot (C - A + D)}{B \cdot D} = 2.643245 \qquad Num := \frac{N_u \cdot (C - A + D)}{\sqrt{\left[N_u \cdot (C - A + D)\right]^2}} \qquad Den := \frac{B \cdot D}{\sqrt{(B \cdot D)^2}} \qquad L := \frac{Num}{Den}$$

Definitions.

$Num = 1 \quad Den = 1 \quad L = 1$

$$\frac{Num}{Den} = 1 \qquad L - \frac{N_u \cdot \sqrt{B^2 \cdot D^2} \cdot (C - A + D)}{B \cdot D \cdot \sqrt{N_u^2 \cdot (C - A + D)^2}} = 0$$

There is another thing I want to mention. Each of these uses of the analog and logical grammar systems rely on a number of givens. This means that each can be transformed by setting each of the givens to unity which produces 2 to the number of givens for results, or 2^n. These I call transforms. If I have 4 givens, then I have sixteen equations the analog figure can represent; if I have eight givens, I have 256 equations the glyph can represent. Or one can call them the logical family of an analog name. Thus one can see very plainly, that one will reach different conclusions in accordance with the number of things we do not know about a thing. All things being equal, means our ignorance of givens affect what we know of anything.

And, one should realize by now, I believe that plotting points as has been common for a long time is absolutely stupid as the analog geometry can project the waves, every one of them, by itself. So called Cartesian Geometry is not geometry at all. As we construct measuring systems with geometry, we certainly do not start with one as a given, or in simple, we do not start with a measuring stick, much less two or three of them claiming we now have xy and z coordinates unless we are making a tv or 3d screen which is simplified application, not a formal grammar.

Also, if one noticed from the start, we start this process with common grammar and arithmetic. To solve for any equation, with at least one given, one can use the wave portion of a glyph to find a suitable solution to a given problem. Equations are not something to be solved, they are just the products of grammars which we construct, so if we knew what we were doing, solving for an equation is like asking our self what in the hell have we been doing? Every grammar book I have ever seen starts in the middle and gets lost in the end. I am not a big fan of trying to answer questions about things I know nothing about, especially when part of the question assumes that the given is something which appears mysteriously in nature. We construct grammar systems commensurate with our linguistic awareness, we do not discover them.

I do not use Trigonometry, Cartesian Coordinate Geometry, or Calculus. Not one of those satisfies the requirements of a grammar system. They may do for felting your hat, but in the end they will drive you mad.

$R = 2.41726$

$$\frac{(N_1 \cdot N_2 \cdot N_3 + N_1 \cdot N_2 \cdot N_4) - N_2 \cdot N_3 \cdot N_4}{N_1 \cdot N_3} = 2.41726$$

$$\frac{(N_1 \cdot N_2 \cdot N_3 + N_1 \cdot N_2 \cdot N_4) - N_2 \cdot N_3 \cdot N_4}{N_1 \cdot N_3} - R = 0.00000$$

$$\frac{N_U \cdot ((C - A) + D)}{B \cdot D} = 2.41726$$

$$\frac{N_U \cdot ((C - A) + D)}{B \cdot D} - R = 0.00000$$

$N_1 = 6.09702$

$N_2 = 1.48879$

$N_3 = 3.28018$

$N_4 = 4.42774$

$N_U = 3.95337$

$A = 0.64841$

$B = 2.65542$

$C = 1.20523$

$D = 0.89286$

$$\frac{N_U}{N_1} = 0.64841$$

$$\frac{N_U}{N_2} = 2.65542$$

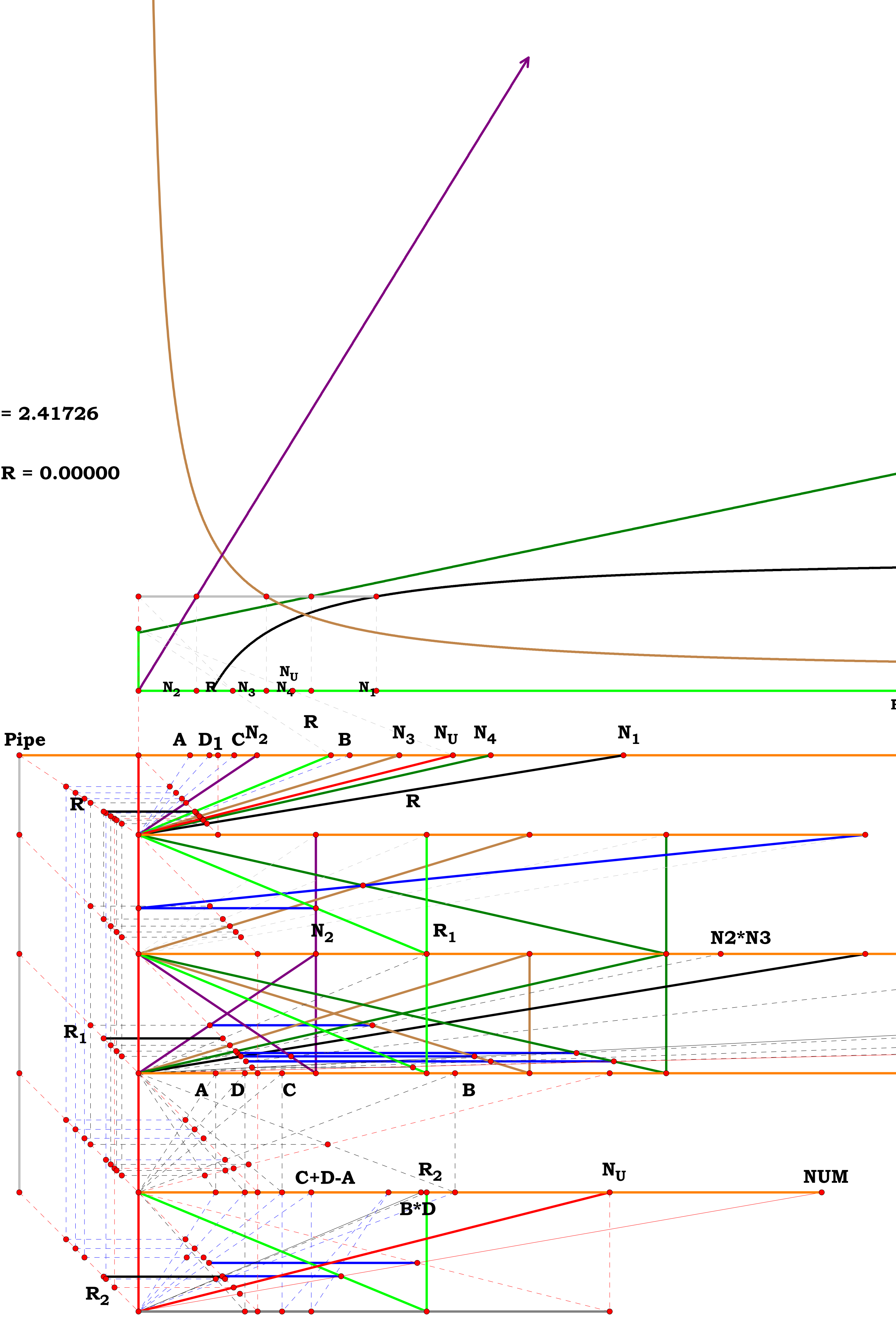
$$\frac{N_U}{N_3} = 1.20523$$

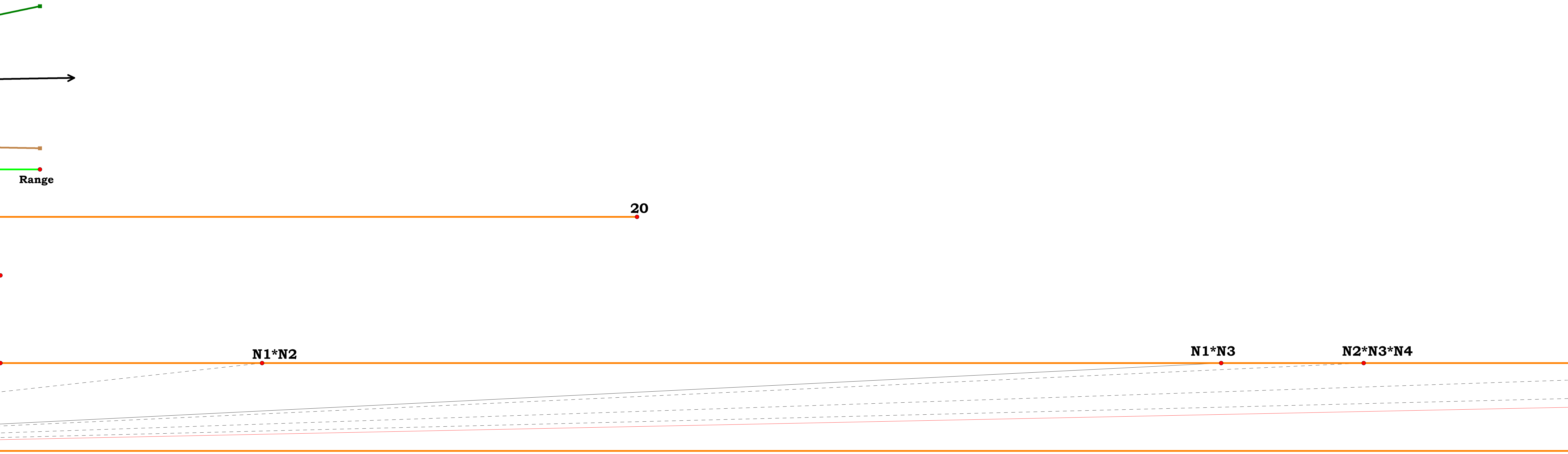
$$\frac{N_U}{N_4} = 0.89286$$

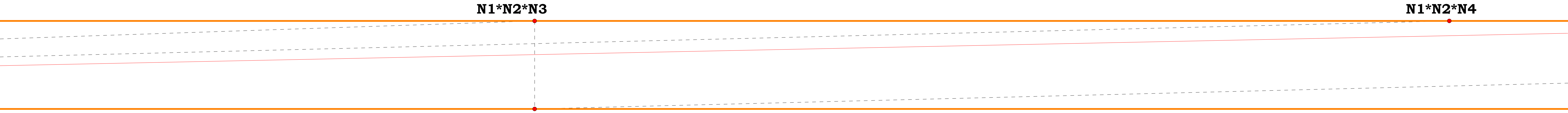
Stem $R = -0.43848$

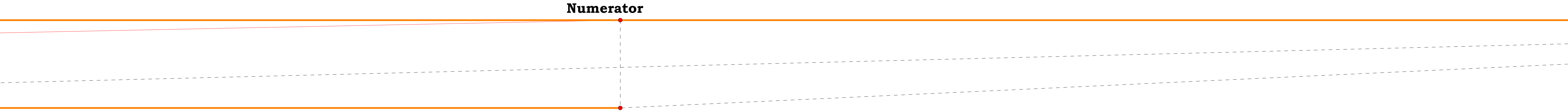
Stem $R_1 = -0.43848$

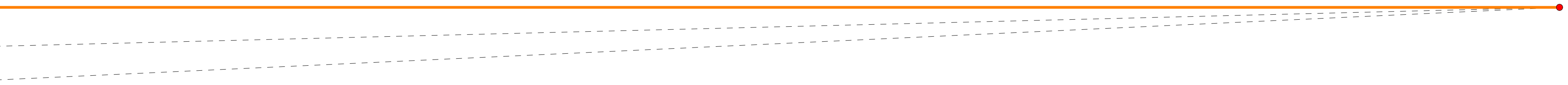
Stem $R_2 = -0.43848$

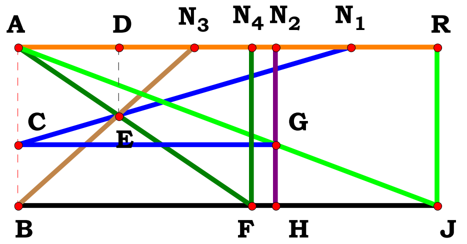



Range
20
N1*N2
N1*N3
N2*N3*N4


N1*N2*N3
N1*N2*N4


Numerator





$N_1 = 2.10101$
$N_2 = 1.62626$
$N_3 = 1.11111$
$N_4 = 1.47475$
$R = 2.64325$

Unit. $AB := 1$ **Given.** $N_1 := 2.10101$ $N_2 := 1.62626$ $N_3 := 1.11111$ $N_4 := 1.47475$

$N_u := 3$ $A := \frac{N_u}{N_1}$ $B := \frac{N_u}{N_2}$ $C := \frac{N_u}{N_3}$ $D := \frac{N_u}{N_4}$

Unit-1CST7R8

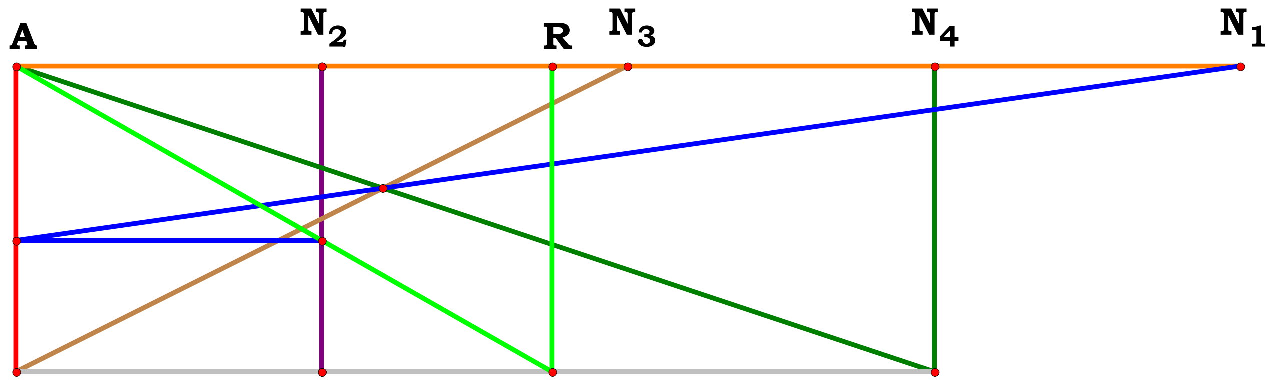
Descriptions.

$DE := \frac{N_3}{N_3 + N_4}$ $AD := N_4 \cdot DE$

$AC := \frac{DE \cdot N_1}{N_1 - AD}$

$R := \frac{N_2}{AC}$

$R = 2.643245$



$N_1 = 4.00000$
$N_2 = 1.00000$
$N_3 = 2.00000$
$N_4 = 3.00000$
$R = 1.75000$

$\frac{(N_1 \cdot N_2 \cdot N_3 + N_1 \cdot N_2 \cdot N_4) - N_2 \cdot N_3 \cdot N_4}{N_1 \cdot N_3} - R = 0.00000$

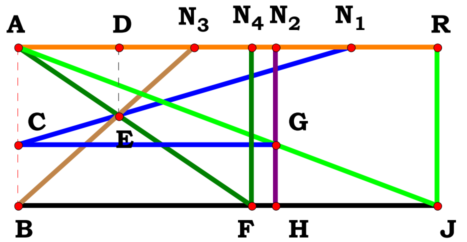
Definitions.

$$R - \frac{N_1 \cdot N_2 \cdot N_3 + N_1 \cdot N_2 \cdot N_4 - N_2 \cdot N_3 \cdot N_4}{N_1 \cdot N_3} = 0$$

$$R - \frac{N_u \cdot (C - A + D)}{B \cdot D} = 0$$

$$\frac{N_1 \cdot N_2 \cdot N_3 + N_1 \cdot N_2 \cdot N_4 - N_2 \cdot N_3 \cdot N_4}{N_1 \cdot N_3} = 2.643245$$

$$\frac{N_u \cdot (C - A + D)}{B \cdot D} = 2.643245$$



$N_1 = 2.10101$
$N_2 = 1.62626$
$N_3 = 1.11111$
$N_4 = 1.47475$
$R = 2.64325$

Unit. $AB := 1$ **Given.** $N_1 := 2.10101$ $N_2 := 1.62626$ $N_3 := 1.11111$ $N_4 := 1.47475$

$N_u := 3$ $A := \frac{N_u}{N_1}$ $B := \frac{N_u}{N_2}$ $C := \frac{N_u}{N_3}$ $D := \frac{N_u}{N_4}$

Absolute Logical Operators 1CST7R8

Descriptions.

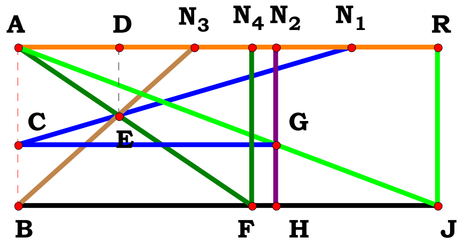
$$\frac{N_u \cdot (C - A + D)}{B \cdot D} = 2.643245 \qquad Num := \frac{N_u \cdot (C - A + D)}{\sqrt{\left[N_u \cdot (C - A + D)\right]^2}} \qquad Den := \frac{B \cdot D}{\sqrt{(B \cdot D)^2}} \qquad L := \frac{Num}{Den}$$

Definitions.

$Num = 1$ $Den = 1$ $L = 1$

$$\frac{Num}{Den} = 1$$

$$L - \frac{N_u \cdot \sqrt{B^2 \cdot D^2} \cdot (C - A + D)}{B \cdot D \cdot \sqrt{N_u{}^2 \cdot (C - A + D)^2}} = 0$$



$N_1 = 2.10101$

$N_2 = 1.62626$

$N_3 = 1.11111$

$N_4 = 1.47475$

$R = 2.64325$

Unit. $AB := 1$ **Given.** $N_1 := 2.10101$ $N_2 := 1.62626$ $N_3 := 1.11111$ $N_4 := 1.47475$

$N_u := 3$ $A := \frac{N_u}{N_1}$ $B := \frac{N_u}{N_2}$ $C := \frac{N_u}{N_3}$ $D := \frac{N_u}{N_4}$

Absolute Transforms 1CST7R8

Descriptions.

$$\frac{N_u \cdot (C - A + D)}{B \cdot D} = 2.643245$$

For 4 variables there are16 subsets.

0, 0, 0, 0: 1

1, 0, 0, 0: $-\frac{A - 2 \cdot N_u}{N_u}$

0, 2, 0, 0: $\frac{N_u}{B}$

1, 2, 0, 0: $-\frac{A - 2 \cdot N_u}{B}$

0, 0, 3, 0: $\frac{C}{N_u}$

1, 0, 3, 0: $\frac{C - A + N_u}{N_u}$

0, 2, 3, 0: $\frac{C}{B}$

1, 2, 3, 0: $\frac{C - A + N_u}{B}$

0, 0, 0, 4: 1

1, 0, 0, 4: $\frac{D - A + N_u}{D}$

0, 2, 0, 4: $\frac{N_u}{B}$

1, 2, 0, 4: $\frac{N_u \cdot \left(D - A + N_u\right)}{B \cdot D}$

0, 0, 3, 4: $\frac{C + D - N_u}{D}$

1, 0, 3, 4: $\frac{C - A + D}{D}$

0, 2, 3, 4: $\frac{N_u \cdot \left(C + D - N_u\right)}{B \cdot D}$

1, 2, 3, 4: $\frac{N_u \cdot (C - A + D)}{B \cdot D}$

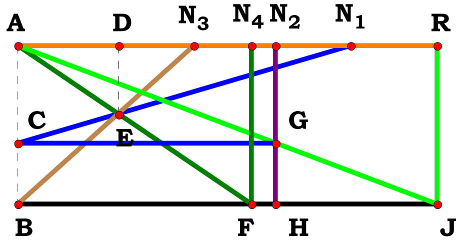
Given.

$A := 2.10101$

$B := 1.62626$

$C := 1.11111$

$D := 1.47475$



$N_1 = 2.10101$

$N_2 = 1.62626$

$N_3 = 1.11111$

$N_4 = 1.47475$

$R = 2.64325$

Relative Logical Operators 1CST7R8

Descriptions.

$$\frac{A\cdot B\cdot(C+D)-B\cdot C\cdot D}{A\cdot C} = 2.643245$$

$$Num := \frac{A\cdot B\cdot(C+D)-B\cdot C\cdot D}{\sqrt{[A\cdot B\cdot(C+D)-B\cdot C\cdot D]^2}} \qquad Den := \frac{A\cdot C}{\sqrt{(A\cdot C)^2}} \qquad L := \frac{Num}{Den}$$

Definitions.

$Num = 1 \qquad Den = 1 \qquad L = 1$

$$L - \frac{\sqrt{A^2\cdot C^2}\cdot[A\cdot B\cdot(C+D)-B\cdot C\cdot D]}{A\cdot C\cdot\sqrt{[A\cdot B\cdot(C+D)-B\cdot C\cdot D]^2}} = 0$$

For 4 variables there are 16 subsets.

0, 0, 0, 0: 1

1, 0, 0, 0: $\frac{\sqrt{A^2}\cdot(2\cdot A-1)}{A\cdot\sqrt{(2\cdot A-1)^2}} = 1$

0, 2, 0, 0: $\frac{B}{\sqrt{B^2}} = 1$

1, 2, 0, 0: $-\frac{(B-2\cdot A\cdot B)\cdot\sqrt{A^2}}{A\cdot\sqrt{(B-2\cdot A\cdot B)^2}} = 1$

0, 0, 3, 0: $\frac{\sqrt{C^2}}{C} = 1$

1, 0, 3, 0: $-\frac{\sqrt{A^2\cdot C^2}\cdot[C-A\cdot(C+1)]}{A\cdot C\cdot\sqrt{[C-A\cdot(C+1)]^2}} = 1$

0, 2, 3, 0: $-\frac{\sqrt{C^2}\cdot[B\cdot C-B\cdot(C+1)]}{C\cdot\sqrt{[B\cdot C-B\cdot(C+1)]^2}} = 1$

1, 2, 3, 0: $-\frac{\sqrt{A^2\cdot C^2}\cdot[B\cdot C-A\cdot B\cdot(C+1)]}{A\cdot C\cdot\sqrt{[B\cdot C-A\cdot B\cdot(C+1)]^2}} = 1$

0, 0, 0, 4: 1

1, 0, 0, 4: $-\frac{\sqrt{A^2}\cdot[D-A\cdot(D+1)]}{A\cdot\sqrt{[D-A\cdot(D+1)]^2}} = 1$

0, 2, 0, 4: $-\frac{B\cdot D-B\cdot(D+1)}{\sqrt{[B\cdot D-B\cdot(D+1)]^2}} = 1$

1, 2, 0, 4: $-\frac{\sqrt{A^2}\cdot[B\cdot D-A\cdot B\cdot(D+1)]}{A\cdot\sqrt{[B\cdot D-A\cdot B\cdot(D+1)]^2}} = 1$

0, 0, 3, 4: $\frac{\sqrt{C^2}\cdot(C+D-C\cdot D)}{C\cdot\sqrt{(C+D-C\cdot D)^2}} = 1$

1, 0, 3, 4: $\frac{\sqrt{A^2\cdot C^2}\cdot[A\cdot(C+D)-C\cdot D]}{A\cdot C\cdot\sqrt{[A\cdot(C+D)-C\cdot D]^2}} = 1$

0, 2, 3, 4: $\frac{\sqrt{C^2}\cdot[B\cdot(C+D)-B\cdot C\cdot D]}{C\cdot\sqrt{[B\cdot(C+D)-B\cdot C\cdot D]^2}} = 1$

1, 2, 3, 4: $\frac{\sqrt{A^2\cdot C^2}\cdot[A\cdot B\cdot(C+D)-B\cdot C\cdot D]}{A\cdot C\cdot\sqrt{[A\cdot B\cdot(C+D)-B\cdot C\cdot D]^2}} = 1$

Unit.

$AB := 1$

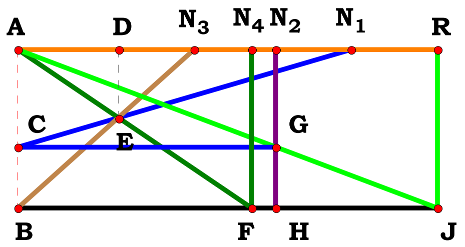
Given.

$N_1 := 2.10101$

$N_2 := 1.62626$

$N_3 := 1.11111$

$N_4 := 1.47475$



$N_1 = 2.10101$

$N_2 = 1.62626$

$N_3 = 1.11111$

$N_4 = 1.47475$

$R = 2.64325$

Relative Transforms 1CST7R8

Descriptions.

$$\frac{N_1 \cdot N_2 \cdot N_3 + N_1 \cdot N_2 \cdot N_4 - N_2 \cdot N_3 \cdot N_4}{N_1 \cdot N_3} = 2.643245$$

For 4 variables there are 16 subsets.

0, 0, 0, 0: 1

1, 0, 0, 0: $\frac{2 \cdot N_1 - 1}{N_1}$

0, 2, 0, 0: N_2

1, 2, 0, 0: $\frac{2 \cdot N_1 \cdot N_2 - N_2}{N_1}$

0, 0, 3, 0: $\frac{1}{N_3}$

1, 0, 3, 0: $\frac{N_1 - N_3 + N_1 \cdot N_3}{N_1 \cdot N_3}$

0, 2, 3, 0: $\frac{N_2}{N_3}$

1, 2, 3, 0: $\frac{N_1 \cdot N_2 - N_2 \cdot N_3 + N_1 \cdot N_2 \cdot N_3}{N_1 \cdot N_3}$

0, 0, 0, 4: 1

1, 0, 0, 4: $\frac{N_1 - N_4 + N_1 \cdot N_4}{N_1}$

0, 2, 0, 4: N_2

1, 2, 0, 4: $\frac{N_1 \cdot N_2 - N_2 \cdot N_4 + N_1 \cdot N_2 \cdot N_4}{N_1}$

0, 0, 3, 4: $\frac{N_3 + N_4 - N_3 \cdot N_4}{N_3}$

1, 0, 3, 4: $\frac{N_1 \cdot N_3 + N_1 \cdot N_4 - N_3 \cdot N_4}{N_1 \cdot N_3}$

0, 2, 3, 4: $\frac{N_2 \cdot N_3 + N_2 \cdot N_4 - N_2 \cdot N_3 \cdot N_4}{N_3}$

1, 2, 3, 4: $\frac{N_1 \cdot N_2 \cdot N_3 + N_1 \cdot N_2 \cdot N_4 - N_2 \cdot N_3 \cdot N_4}{N_1 \cdot N_3}$

Basic Arithmetic In Geometry

By John Clark

John 312

Basic Arithmetic In Geometry

Addition

John 312

Unit.

Given.

Descriptions.

Definitions.

Introduction to Addition:

$N_1 = 2.00000$

$N_2 = 3.00000$

$R_0 = 5.00000$

$(N_1+N_2)-R_0 = 0.00000$

$Y = 1.39903$

$\frac{A}{Y} = 2.00000$ $A = 2.79805$

$\frac{B}{Y} = 3.00000$ $B = 4.19708$

$\frac{R_1}{Y} = 5.00000$ $R_1 = 6.99513$

$\frac{C}{Y} = 2.00000$ $C = 2.79805$

$\frac{D}{Y} = 3.00000$ $D = 4.19708$

$\frac{R_2}{Y} = 5.00000$ $R_2 = 6.99513$

$\frac{E}{Y} = 2.00000$ $E = 2.79805$

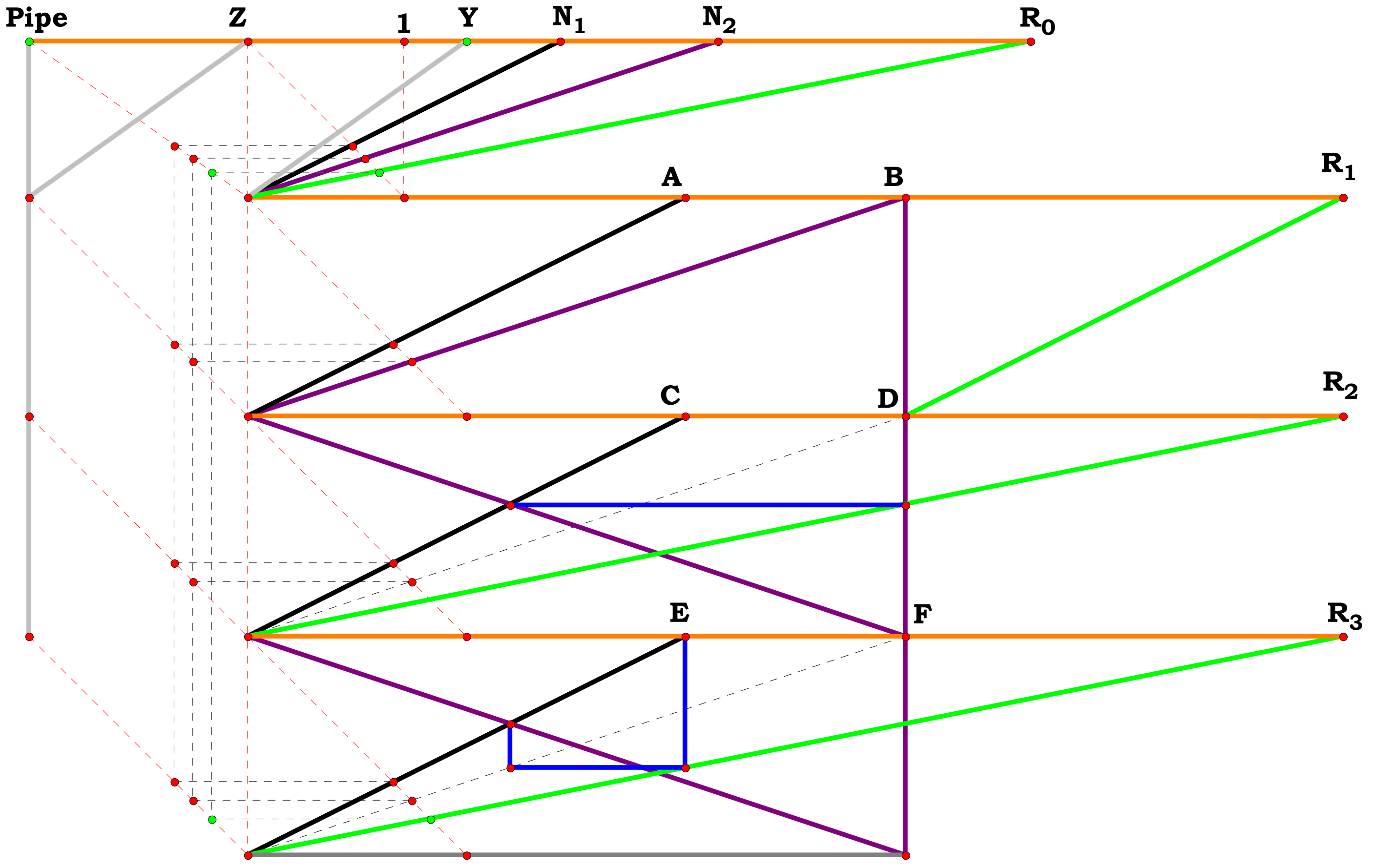
$\frac{F}{Y} = 3.00000$ $F = 4.19708$

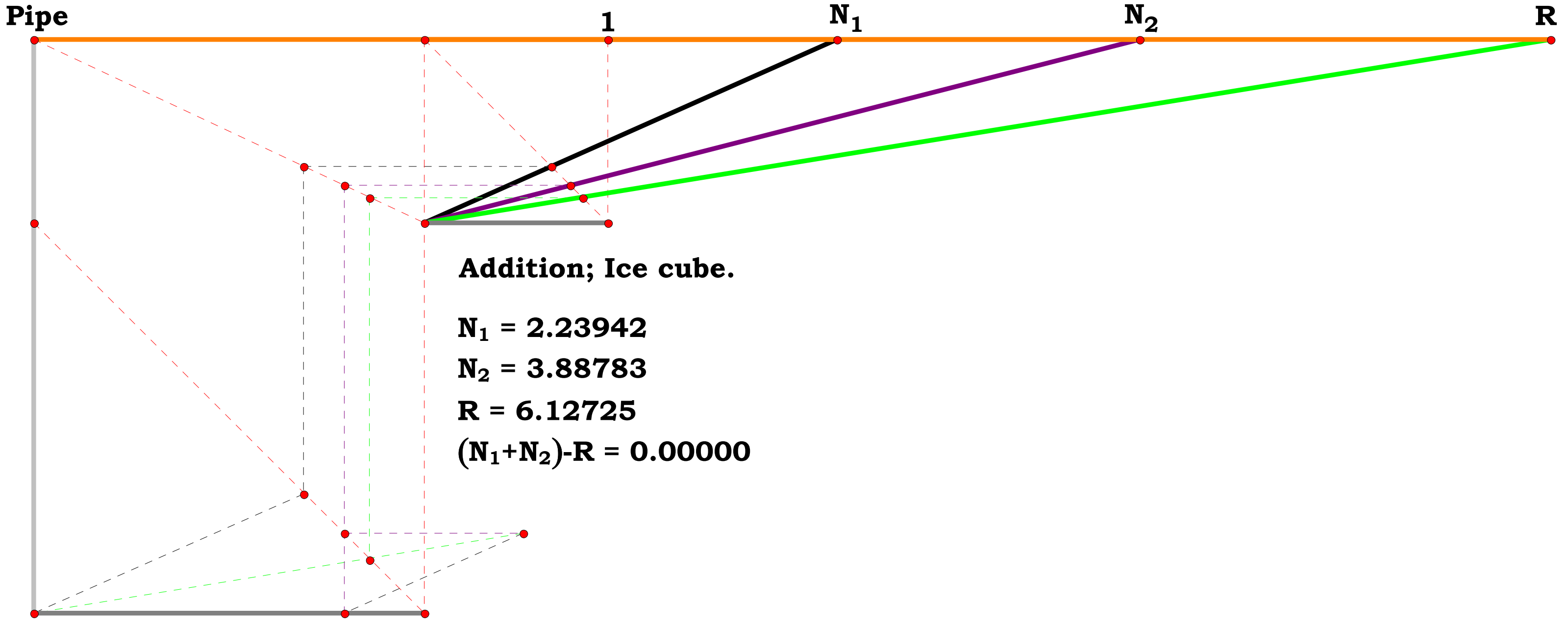
$\frac{R_3}{Y} = 5.00000$ $R_3 = 6.99513$

When collecting analog glyphs I like to put them into a structure I call Jacob's Ladder. It is a figure used for a more formal and orderly display of Basic Analog Grammar, or Mathematics and it takes advantage of data piping which can distribute products over an analog network. Everything happens concurrently.

At the bottom, when one is writing machines, can do most if not all computations in the pipeline allowing one to actually build a more compact computation matrix.

One can do their computations from either end of a segment. On one end one might look for the end of it over miles, but every thing is also in the same proportion at the unit end of the segment. Since Sketchpad does not have a zoom function, one can actually zoom using the pipe. One can actually shrink the pipe down to the sub-atomic level and save a whole lot of paper. Geometry, when done intelligibly, does not change with perceptible size. Those who claim to be mathematicians, logicians, etc, who make their arguments based on the perceptible are only trying to convince those who are as stupid or stupider than they are, something like spooky action at a perceptible distance.





Addition; Ice cube.

$N_1 = 2.23942$

$N_2 = 3.88783$

$R = 6.12725$

$(N_1+N_2)-R = 0.00000$

Unit.

$AF := 1$

Given.

$N_1 := .94258 \quad AC := N_1$

$N_2 := 1.41387 \quad AD := N_2 \quad FH := N_2$

Descriptions.

$AB := \frac{AD \cdot AC}{AC + AD} \qquad AB = 0.565548$

$BC := AC - AB$

$FG := \frac{AC \cdot FH}{AC + FH} \qquad FG - AB = 0$

$GH := FH - FG$

$EG := \frac{FH}{AC + FH} \qquad EG = 0.6$

$BE := \frac{AC}{AC + FH} \qquad BE = 0.4$

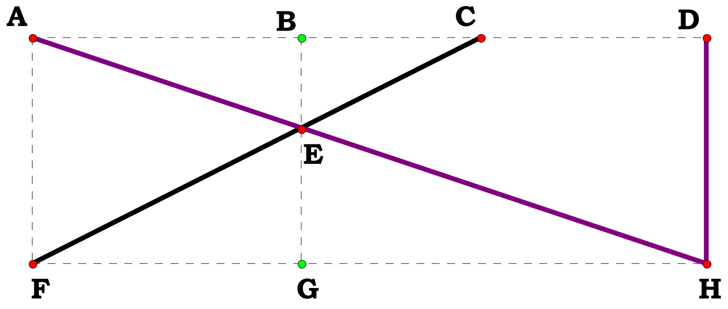
Definitions.

$AB - \frac{N_1 \cdot N_2}{N_1 + N_2} = 0 \qquad FG - \frac{N_1 \cdot N_2}{N_1 + N_2} = 0$

$BC - \frac{{N_1}^2}{N_1 + N_2} = 0 \qquad GH - \frac{{N_2}^2}{N_1 + N_2} = 0$

$EG - \frac{N_2}{N_1 + N_2} = 0 \qquad BE - \frac{N_1}{N_1 + N_2} = 0$

Addition: a note on proportion



$AF = 1.00000$
$AB = 0.56555$
$AC = 0.94258$
$AD = 1.41387$
$EG = 0.60000$
$BE = 0.40000$

Whenever we have two lines crossing such as C and D, then we have a few handy proportions to write:

Unit.

$AB := 1$

Given.

$N_1 := 2 \quad AC := N_1$

$N_2 := 3 \quad AD := N_2 \quad FG := N_2$

Descriptions.

$$FP := \frac{AD}{AC + AD} \qquad FP = 0.6$$

$$R_2 := \frac{AD}{FP} \qquad R_2 = 5$$

$AB = 1.00000$
$AC = 2.00000$
$AD = 3.00000$
$FP = 0.60000$
$R_2 = 5.00000$

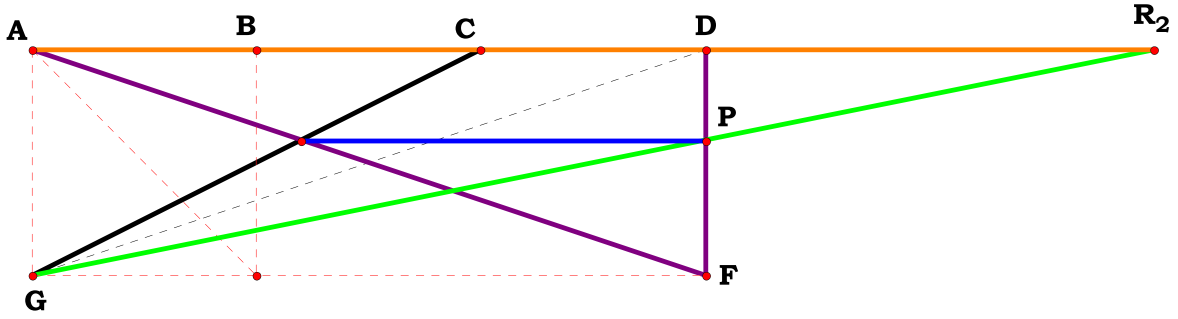
Definitions.

$$FP - \frac{N_2}{N_1 + N_2} = 0$$

$$R_2 - \left(N_1 + N_2\right) = 0$$

Addition: Plate 2

Do not expect me to try and write up plate 1, the whole parallel thingy. The only thing required of one is the grouping of two things. But, for all those highly acclaimed genius's, How much of math can you do without realizing that we only have two primitive concepts and if one negates either or both of them for any reason, at any time, then they have violated them all which would make thought and existence, wholly impossible. As Plato tried to get his readers to comprehend, all of correct grammar is dialectical, or again, binary, or again, is accomplished by complete induction and deduction of a unit. It is wholly revealing when mathematicians work so hard to negate the unit spinning their mystic yarns.



When doiung proportion along a single segment, is not each part of that segment parallel to the other?

Unit.

$AB := 1$

Given.

$N_1 := 2 \quad AE := N_1 \quad BJ := N_1$

$N_2 := 3 \quad AF := N_2 \quad BK := N_2$

Addition: Plate 3.

Descriptions.

$$BH := \frac{AE \cdot BK}{AE + BK} \qquad BH = 1.2$$

$$DH := \frac{AB \cdot BH}{BK} \qquad DH = 0.4$$

$$R_3 := \frac{BJ}{DH} \qquad R_3 = 5$$

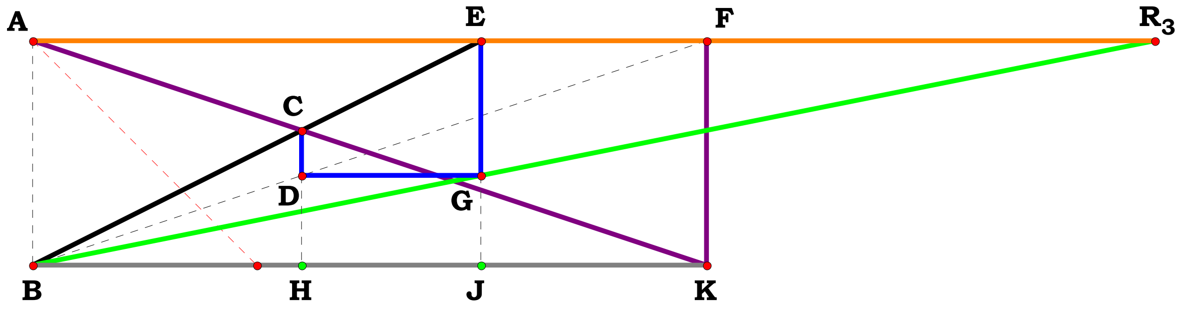
Definitions.

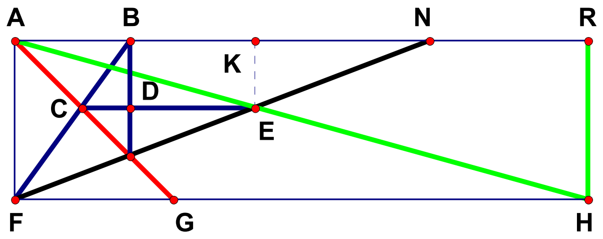
$$BH - \frac{N_1 \cdot N_2}{N_1 + N_2} = 0$$

$$DH - \frac{N_1}{N_1 + N_2} = 0$$

$$R_3 - (N_1 + N_2) = 0$$

$AE = 2.00000$
$AF = 3.00000$
$BH = 1.20000$
$DH = 0.40000$
$R_3 = 5.00000$





1CST2R6

Unit. $AF := 1$ **Given.** $AN := 3$

Descriptions.

$$FG := AF \qquad AK := \frac{AN^2 + AN}{2 \cdot AN + 1} \qquad KE := \frac{AN}{2AN + 1}$$

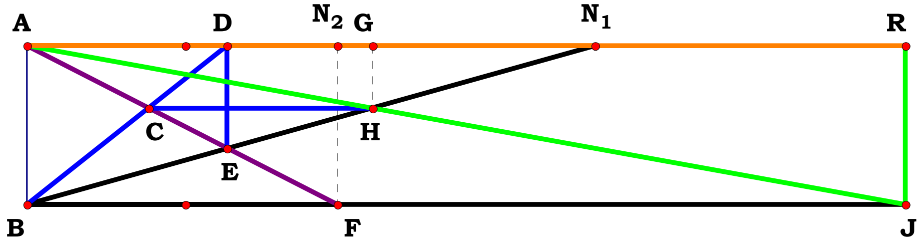
$$FH := \frac{AK \cdot AF}{KE} \qquad AR := FH$$

Definitions.

$$AR - (AN + 1) = 0$$

Given. $N_1 := 3$ $N_2 := 2$ $ab := 1$

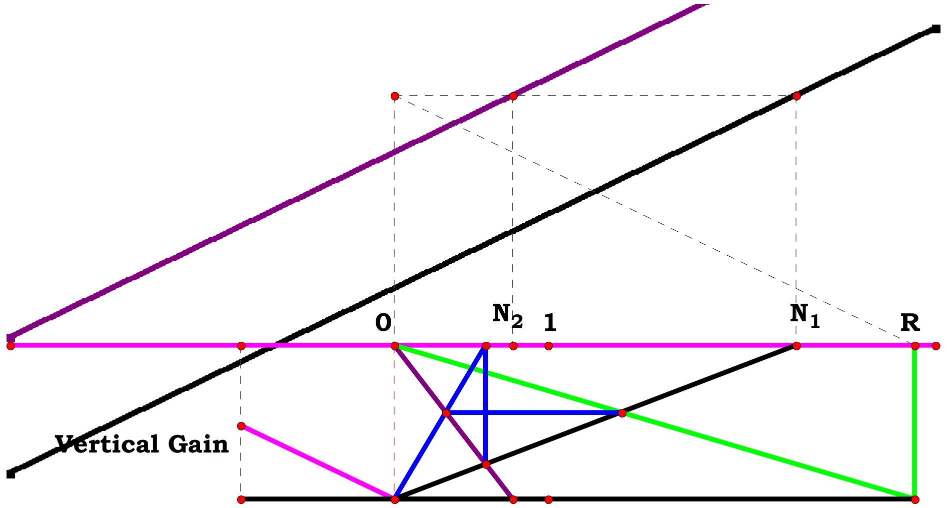
Descriptions.



$$gh := \frac{N_1}{2N_1 + N_2} \qquad ag := \frac{{N_1}^2 + N_1 \cdot N_2}{2 \cdot N_1 + N_2} \qquad ar := \frac{ag \cdot ab}{gh}$$

Definitions.

$$ar - (N_1 + N_2) = 0$$



$g_v = 48.04876$

$N_1 = 2.60632$

$N_2 = 0.77163$

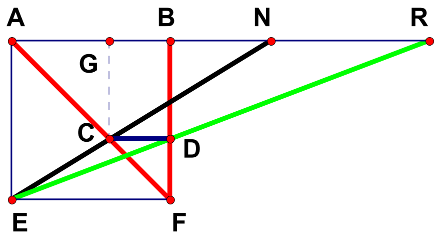
$R = 3.37795$

$(N_1+1)\text{-}R = 0.22837$

$(N_1+N_2)\text{-}R = 0.00000$

Two Transforms.

0, 0.	2
1, 0.	$N_1 + 1$
0, 2.	$1 + N_2$
1, 2.	$(N_1 + N_2)$



1CST4R4

Unit.

$AB := 1$

Given.

$AN := 3$

Descriptions.

$$AG := \frac{AB \cdot AN}{AB + AN} \qquad BD := AG$$

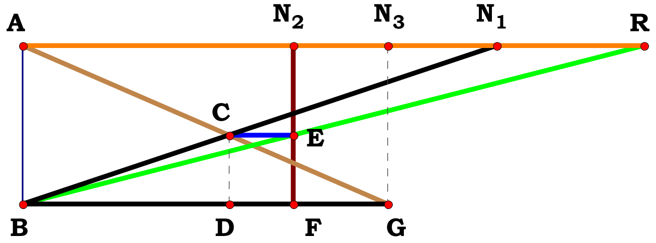
$$AR := \frac{AB^2}{AB - BD}$$

Definitions.

$$AR - (AN + 1) = 0$$

Given. $N_1 := 4$ $N_2 := 3$ $N_3 := 2$

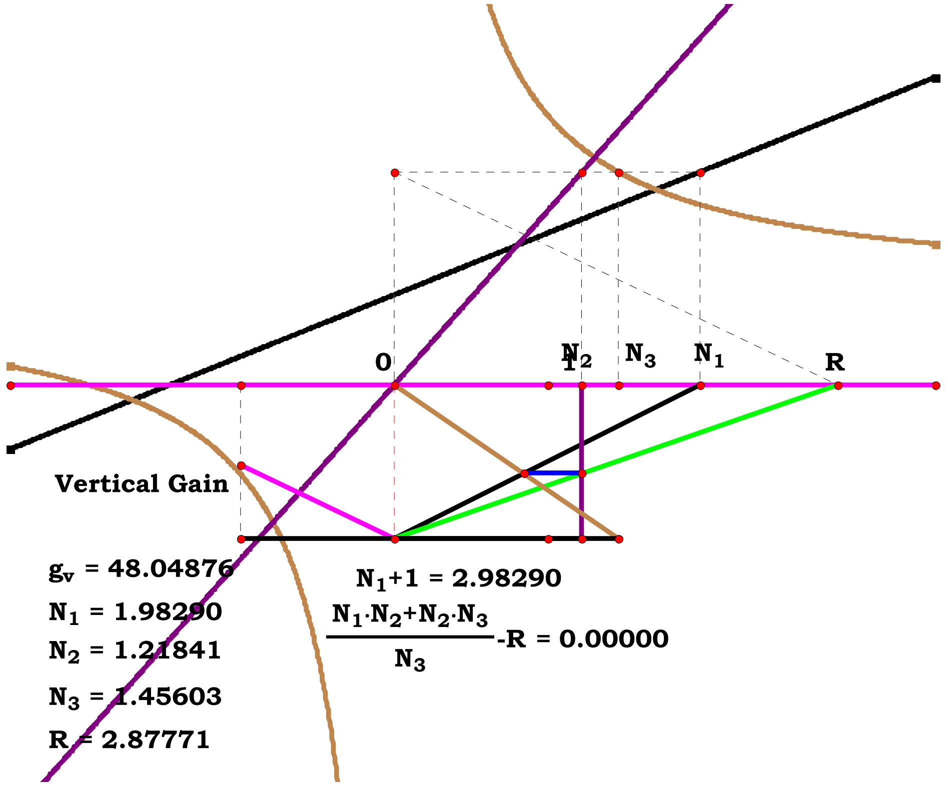
Descriptions.



$$cd := \frac{N_3}{N_1 + N_3} \qquad ar := \frac{N_2}{cd}$$

Definitions.

$$ar - \frac{N_2 \cdot (N_1 + N_3)}{N_3} = 0$$



Three Transforms.

0, 0, 0. 2

1, 0, 0. $N_1 + 1$

0, 2, 0. $2 \cdot N_2$

0, 0, 3. $\frac{N_3 + 1}{N_3}$

1, 2, 0. $N_2 \cdot (N_1 + 1)$

1, 0, 3. $\frac{N_1 + N_3}{N_3}$

0, 2, 3. $\frac{N_2 \cdot (N_3 + 1)}{N_3}$

1, 2, 3. $\frac{N_2 \cdot (N_1 + N_3)}{N_3}$

Basic Arithmetic In Geometry

Subtraction

John 312

$N_1 = 5.42708$

$N_2 = 2.43403$

Subtraction

$R_0 = 2.99305$

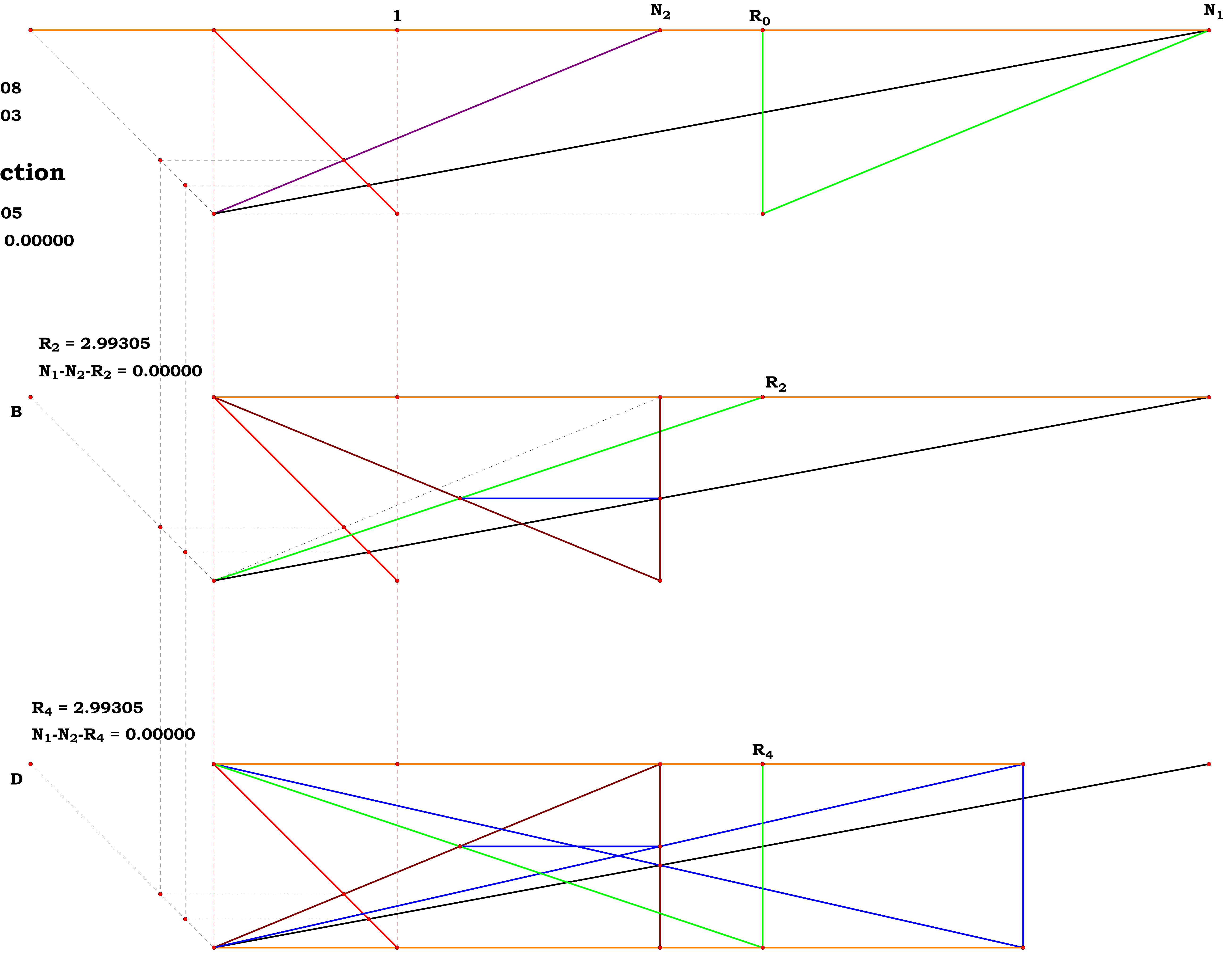
$N_1\text{-}N_2\text{-}R_0 = 0.00000$

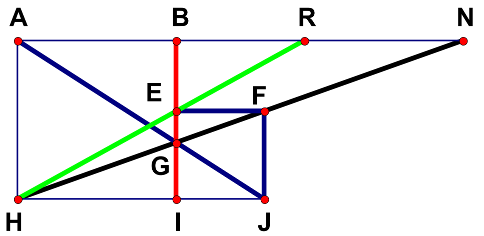
$R_2 = 2.99305$

$N_1\text{-}N_2\text{-}R_2 = 0.00000$

$R_4 = 2.99305$

$N_1\text{-}N_2\text{-}R_4 = 0.00000$





Unit.

$AB := 1$

Given.

$AN := 3$

From Bam Dictionary Sampler 1CST1R1

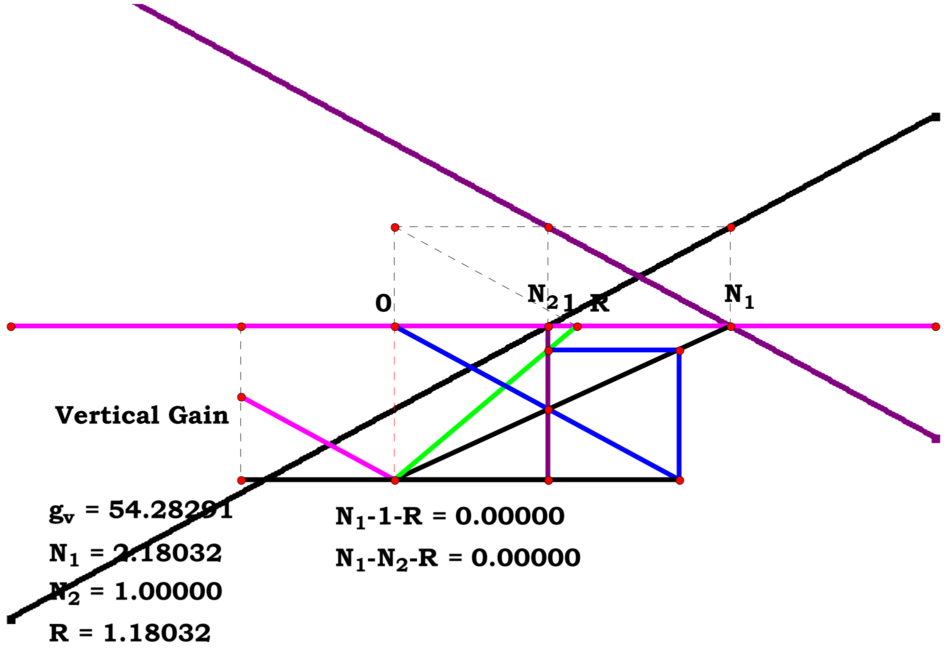
Descriptions.

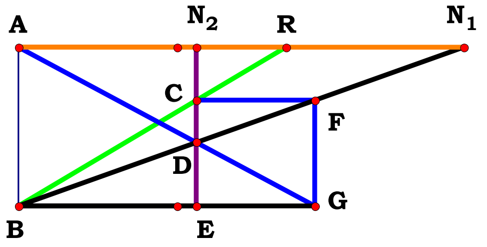
$$AH := AB \quad HI := AB \quad HJ := \frac{AN}{AN-1}$$

$$FJ := \frac{AH \cdot HJ}{AN} \quad EI := FJ \quad AR := \frac{HI^2}{EI}$$

Definitions.

$$(AN-1) - AR = 0$$





$N_1 := 3$

$N_2 := 2$

$$ab := 1 \quad be := N_2 \quad bg := \frac{N_1 \cdot N_2}{N_1 - N_2} \quad fg := \frac{ab \cdot bg}{N_1} \quad ce := fg \quad ar := \frac{ab \cdot N_2}{ce}$$

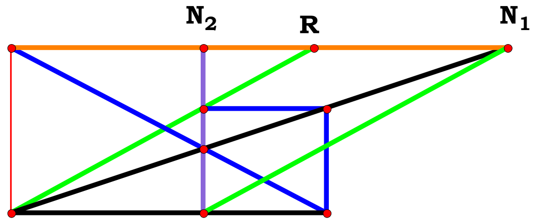
Definitions.

$$fg - \frac{N_2}{N_1 - N_2} = 0 \qquad ar - \left(N_1 - N_2\right) = 0$$

Two Transforms.

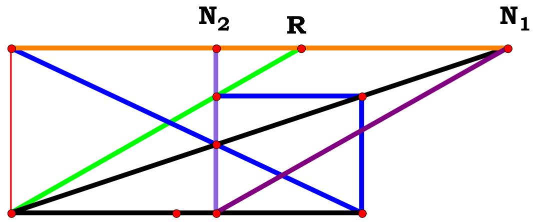
0, 0.	0
1, 0.	$N_1 - 1$
0, 2.	$1 - N_2$
1, 2.	$N_1 - N_2$

$$N_1 - \left(N_2 + ar\right) = 0$$



N_1-(N_2+R) = 0.00000

$$N_2 - \left(N_1 - ar\right) = 0$$



N_2-N_1-R = 0.00000

Basic Arithmetic In Geometry

Multiplication

John 312

N_1 = 2.00000

N_2 = 3.00000

R = 6.00000

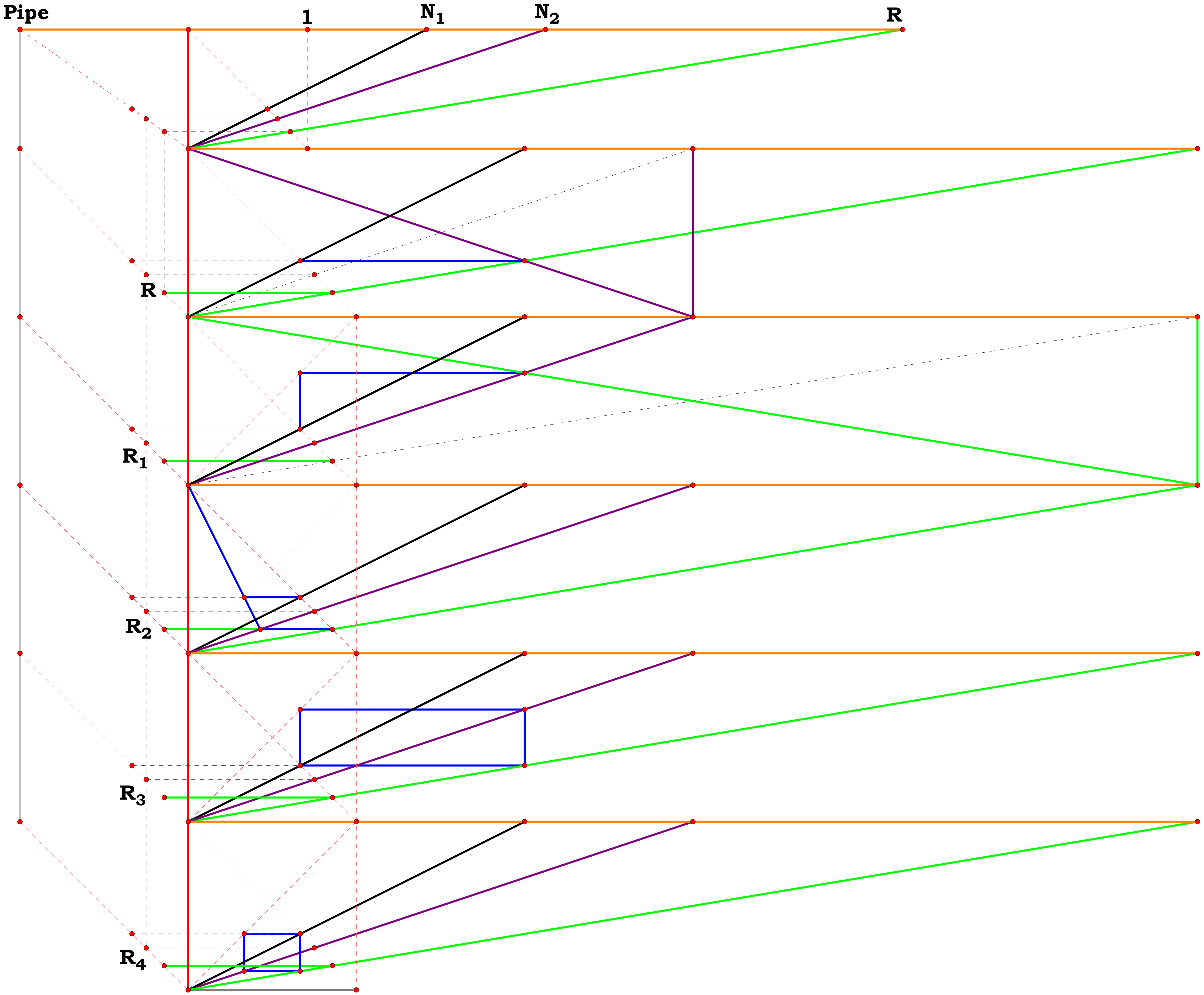
Stub R = -0.20178

Stub R_1 = -0.20178

Stub R_2 = -0.20178

Stub R_3 = -0.20178

Stub R_4 = -0.20178



$AE = 2.88$ cm

$BD = 2.33$ cm

$BF = 1.62$ cm

$AC = 4.15$ cm

$$\frac{AE}{AC} = 0.69$$

$$\frac{BD}{AC} = 0.56$$

$$\frac{BF}{AC} = 0.39$$

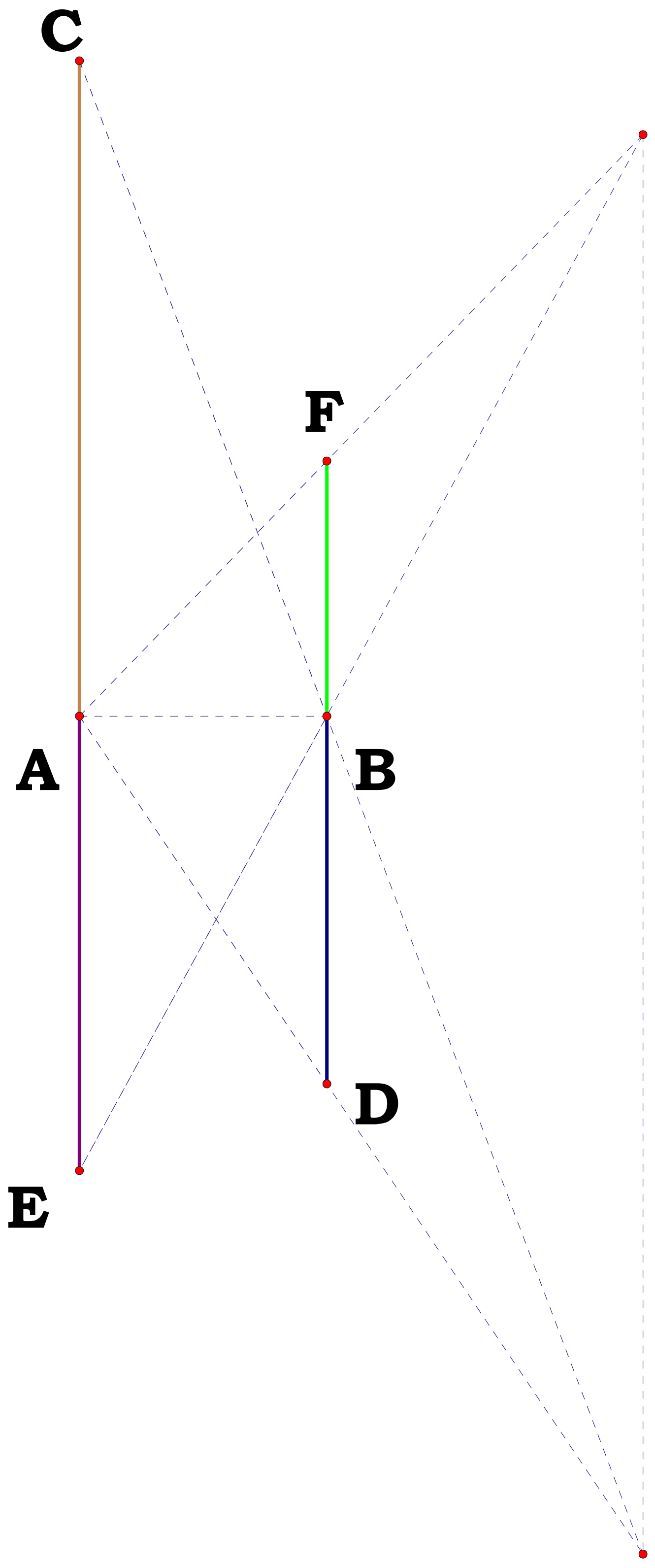
$$\frac{AE}{AC} \cdot \frac{BD}{AC} - \frac{BF}{AC} = 0.00$$

$$\frac{BF}{BD} = 0.69$$

$$\frac{AC}{BD} = 1.78$$

$$\frac{AE}{BD} = 1.24$$

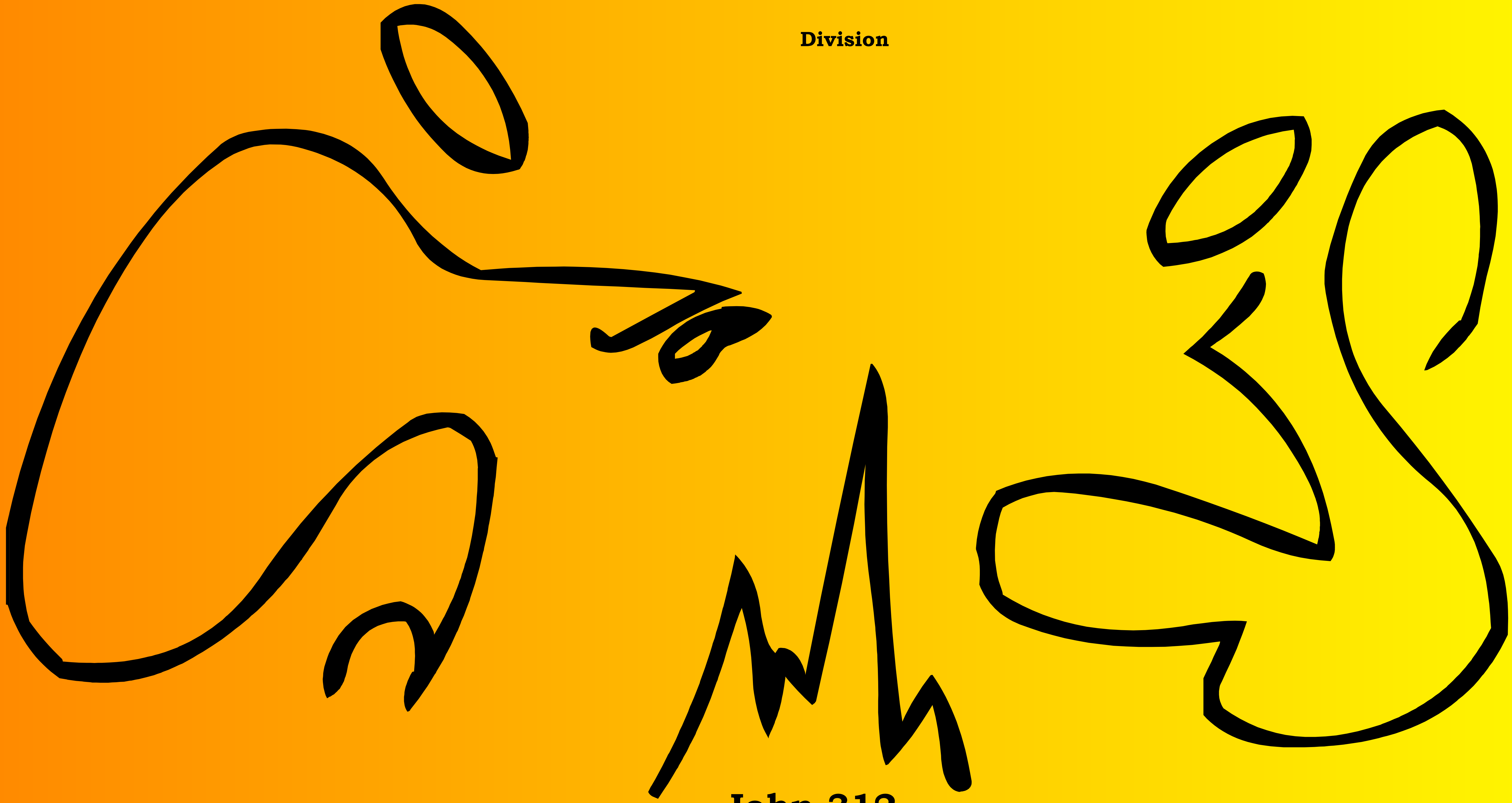
$$\frac{BF}{BD} \cdot \frac{AC}{BD} - \frac{AE}{BD} = 0.00$$



Polar Multiplication

Basic Arithmetic In Geometry

Division



John 312

$N_1 = 3.00000$

$N_2 = 2.00000$

$\frac{N_2}{N_1} = 0.66667$

$R = 0.66667$

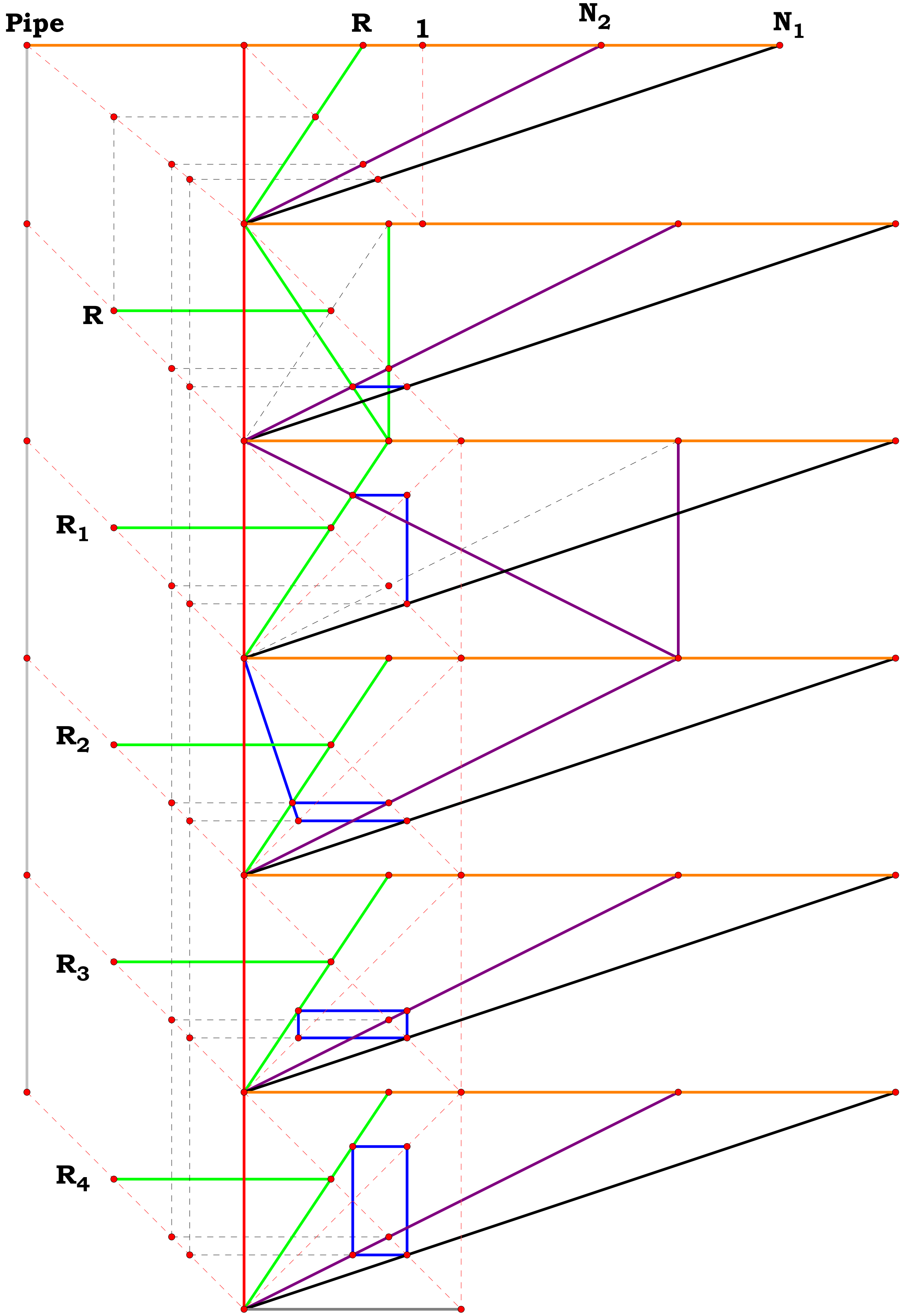
Stub $R = -0.72974$

Stub $R_1 = -0.72974$

Stub $R_2 = -0.72974$

Stub $R_3 = -0.72974$

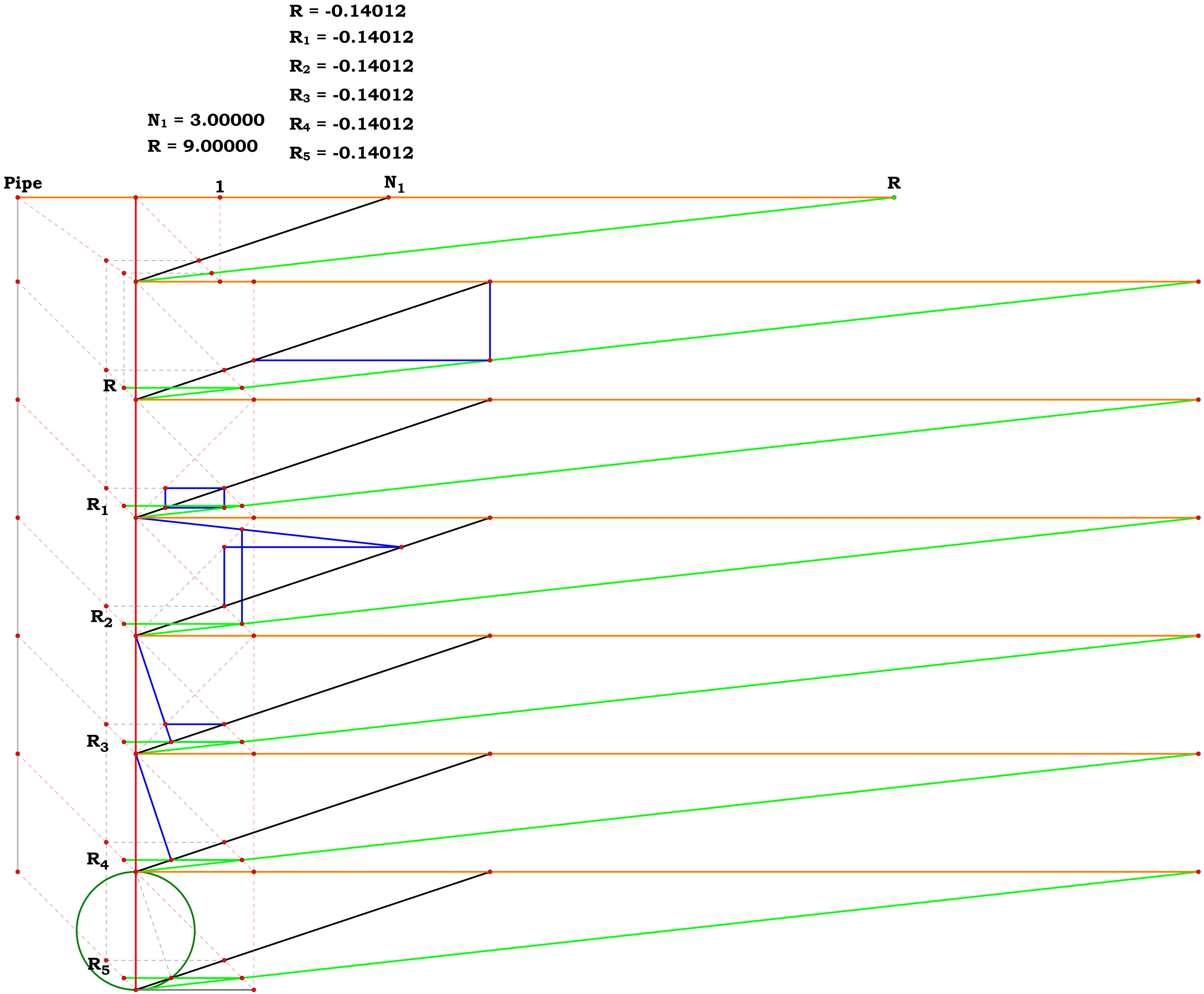
Stub $R_4 = -0.72974$

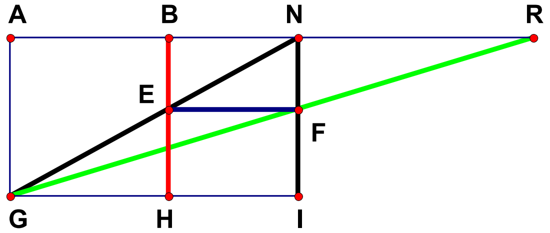


Basic Arithmetic In Geometry

Square

John 312


$R = -0.14012$
$R_1 = -0.14012$
$R_2 = -0.14012$
$R_3 = -0.14012$
$R_4 = -0.14012$
$R_5 = -0.14012$
$N_1 = 3.00000$
$R = 9.00000$
Pipe
1
N_1
R
R
R_1
R_2
R_3
R_4
R_5



Unit.

$AB := 1$

Given.

$AN := 3$

From BAM Sample Dic 1CST1R7

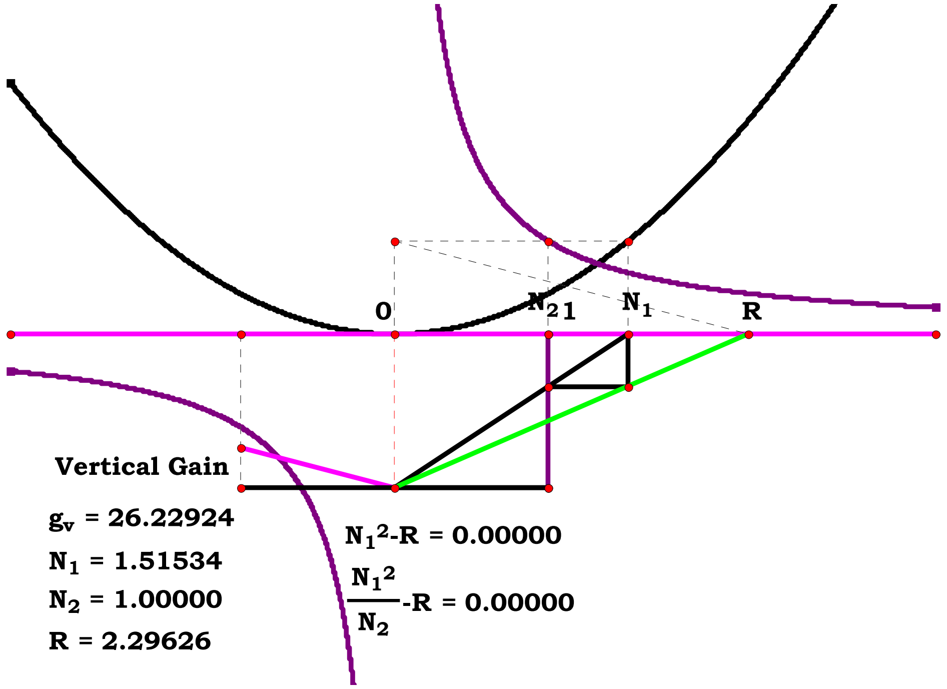
Descriptions.

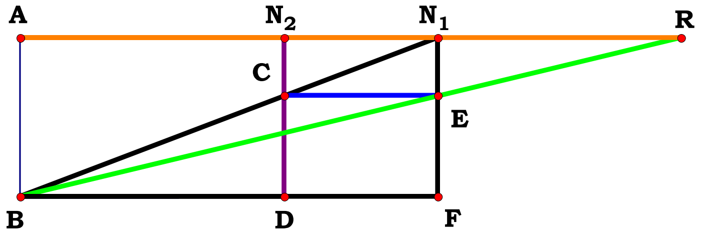
$AG := AB \quad BN := AN - AB \quad BE := \dfrac{AG \cdot BN}{AN}$

$NF := BE \quad FI := AG - NF \quad AR := \dfrac{AN \cdot AG}{FI}$

Definitions.

$BE - \dfrac{AN - 1}{AN} = 0 \quad AR - AN^2 = 0$





$N_1 := 3$

$N_2 := 2$

$ab := 1$

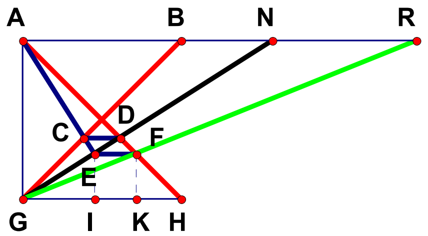
$df := N_1 - N_2 \quad cn := \dfrac{ab \cdot df}{N_1} \quad en := cn \quad ef := ab - cn \quad ar := \dfrac{N_1}{ef}$

Definitions.

$cn - \dfrac{N_1 - N_2}{N_1} = 0 \quad ef - \dfrac{N_2}{N_1} = 0 \quad ar - \dfrac{N_1{}^2}{N_2} = 0$

Two Transforms.

0, 0.	1
1, 0.	$N_1{}^2$
0, 2.	$\dfrac{1}{N_2}$
1, 2.	$\dfrac{N_1{}^2}{N_2}$



From BAM Sample Dic 1CST5R14

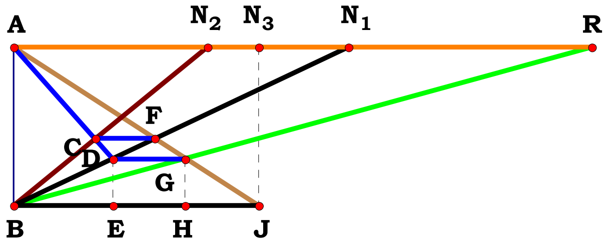
Descriptions.

$$EI := \frac{1}{AN^2 + 1} \qquad HK := EI$$

$$GK := AB - EI \qquad AR := \frac{GK \cdot AB}{HK}$$

Definitions.

$$AR - AN^2 = 0$$



$$N_1 := 5$$

$$N_2 := 3$$

$$N_3 := 2$$

$$de := \frac{N_2 \cdot N_3}{N_1^{\,2} + N_2 \cdot N_3} \qquad bh := N_3 - N_3 \cdot de \qquad ar := \frac{bh}{de}$$

Descriptions.

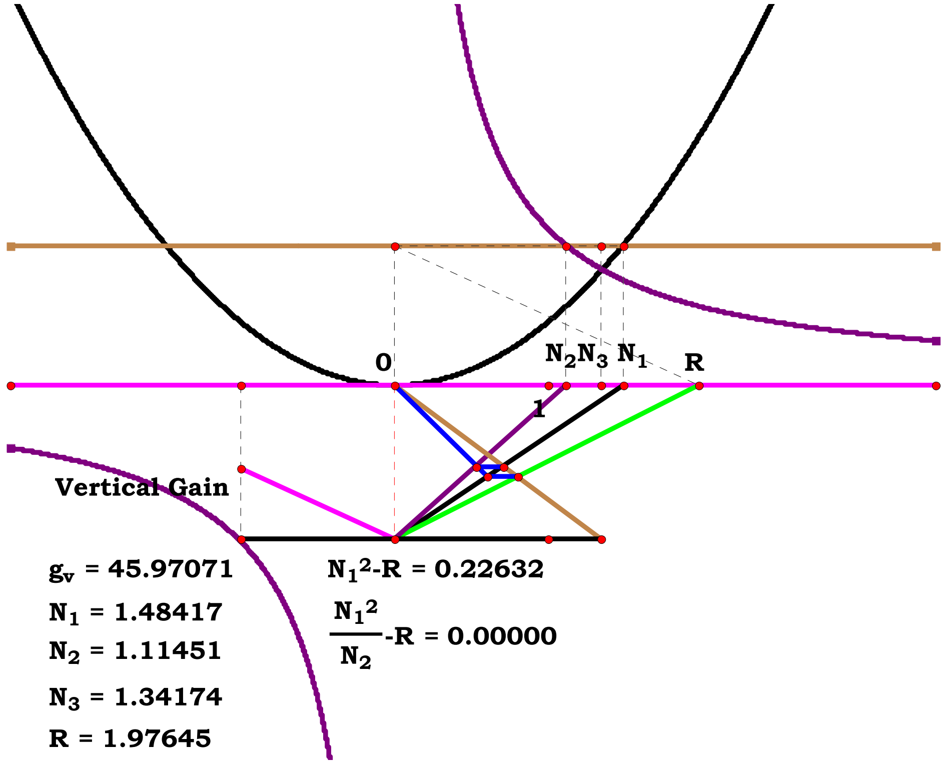
$$bh - \frac{N_1^{\,2} \cdot N_3}{N_1^{\,2} + N_2 \cdot N_3} = 0 \qquad ar - \frac{N_1^{\,2}}{N_2} = 0$$

Unit.

$$AB := 1$$

Given.

$$AN := 3$$



$g_v = 45.97071$

$N_1 = 1.48417$

$N_2 = 1.11451$

$N_3 = 1.34174$

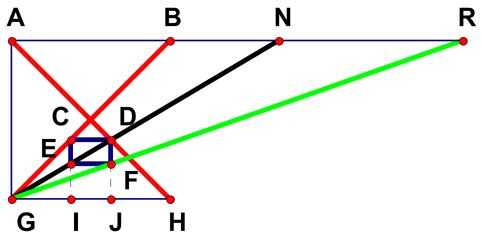
$R = 1.97645$

$N_1{}^2\text{-}R = 0.22632$

$\frac{N_1{}^2}{N_2}\text{-}R = 0.00000$

Three Transforms.

0, 0, 0.	1	1, 2, 0.	$\frac{N_1^{\,2}}{N_2}$
1, 0, 0.	$N_1^{\,2}$	1, 0, 3.	$N_1^{\,2}$
0, 2, 0.	$\frac{1}{N_2}$	0, 2, 3.	$\frac{1}{N_2}$
0, 0, 3.	1	1, 2, 3.	$\frac{N_1^{\,2}}{N_2}$



Unit.

$AB := 1$

Given.

$AN := 3$

From BAM Sample Dic 1CST5R5

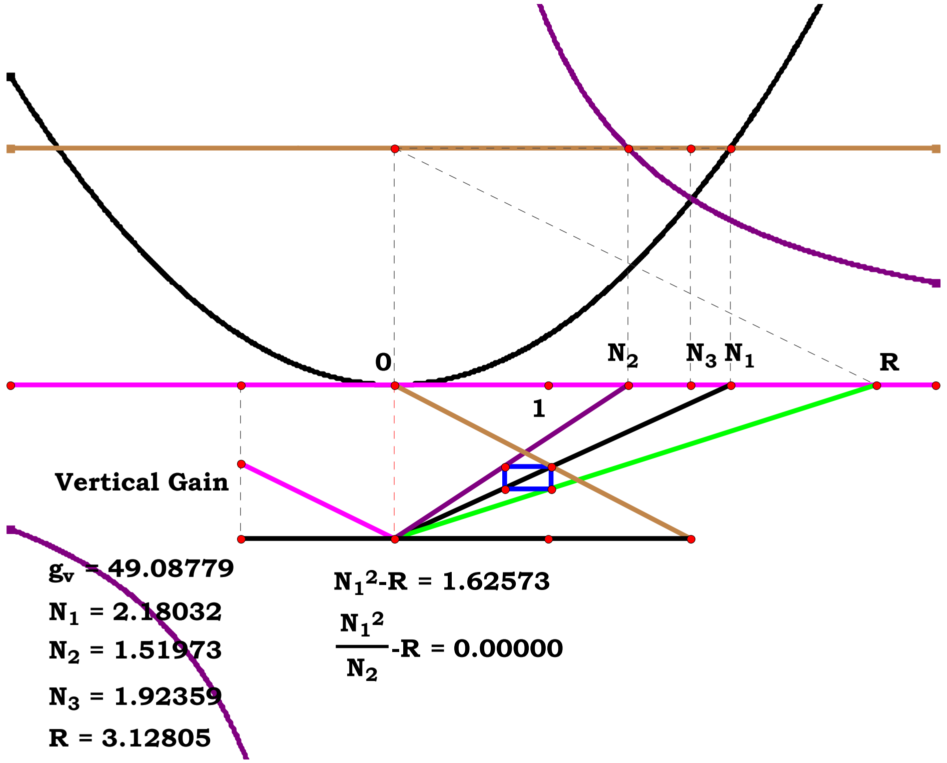
Descriptions.

$$GJ := \frac{AB \cdot AN}{AB + AN} \qquad GI := AB - GJ$$

$$EI := \frac{AB \cdot GI}{AN} \qquad AR := \frac{GJ \cdot AB}{EI}$$

Definitions.

$$AR - AN^2 = 0$$



$g_v = 49.08779$

$N_1 = 2.18032$

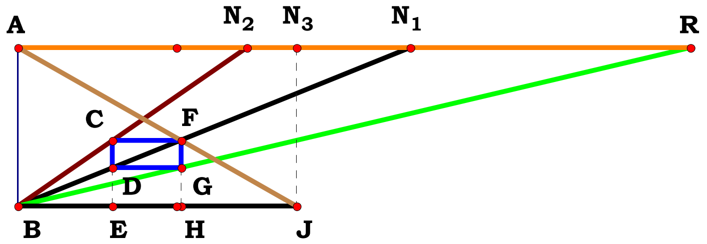
$N_2 = 1.51973$

$N_3 = 1.92359$

$R = 3.12805$

$N_1^2\text{-}R = 1.62573$

$\frac{N_1^2}{N_2}\text{-}R = 0.00000$



$N_1 := 5$

$N_2 := 3$

$N_3 := 2$

$$fh := \frac{N_3}{N_1 + N_3} \qquad be := N_2 \cdot fh \qquad de := \frac{be}{N_1} \qquad bh := N_1 \cdot fh \qquad ar := \frac{bh}{de}$$

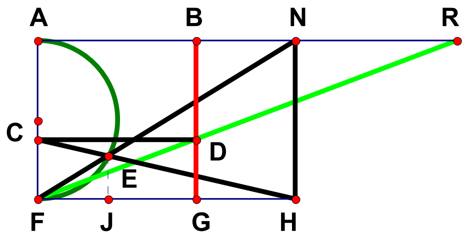
Definitions.

$$be - \frac{N_2 \cdot N_3}{N_1 + N_3} = 0 \qquad de - \frac{N_2 \cdot N_3}{N_1^2 + N_1 \cdot N_3} = 0 \qquad bh - \frac{N_1 \cdot N_3}{N_1 + N_3} = 0 \qquad ar - \frac{N_1^2}{N_2} = 0$$

Three Transforms.

0, 0, 0.	1	1, 2, 0.	$\frac{N_1^2}{N_2}$
1, 0, 0.	N_1^2	1, 0, 3.	N_1^2
0, 2, 0.	$\frac{1}{N_2}$	0, 2, 3.	$\frac{1}{N_2}$
0, 0, 3.	1	1, 2, 3.	$\frac{N_1^2}{N_2}$

From BAM Sample Dic 2SMT8R9



Unit.

$AB := 1$

Given.

$AN := 3$

Descriptions.

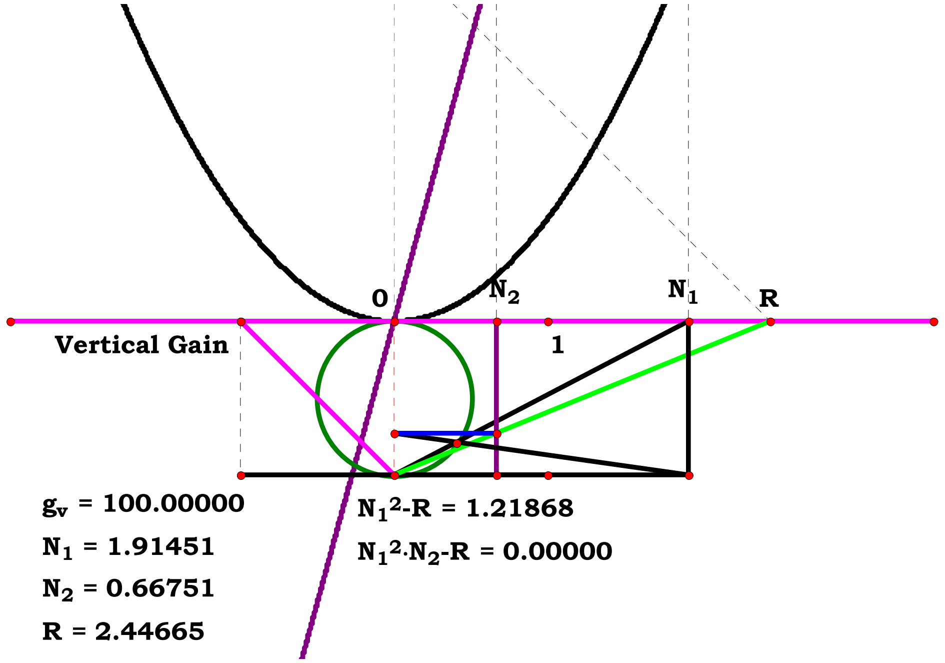
$EJ := \frac{1}{AN^2 + 1} \qquad FJ := \frac{AN}{AN^2 + 1}$

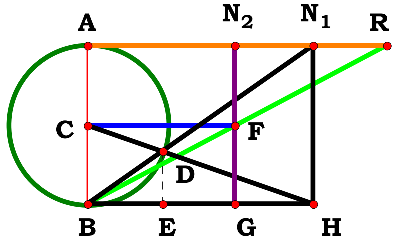
$HJ := AN - FJ \qquad CF := \frac{EJ \cdot AN}{HJ}$

$DG := CF \qquad AR := \frac{AB^2}{DG}$

Definitions.

$AR - AN^2 = 0$





$N_1 := 1.5254$

$N_2 := 1.16466$

$ab := 1 \qquad bn1 := \sqrt{N_1^2 + ab^2} \qquad bd := \frac{ab^2}{bn1} \qquad de := \frac{ab \cdot bd}{bn1}$

$be := \frac{N_1 \cdot bd}{bn1} \qquad bc := \frac{de \cdot N_1}{N_1 - be} \qquad ar := \frac{N_2 \cdot ab}{bc}$

Definitions.

$ar - N_1^2 \cdot N_2 = 0$

Two Transforms.

0, 0.	1
1, 0.	N_1^2
0, 2.	N_2
1, 2.	$N_1^2 \cdot N_2$

Basic Arithmetic In Geometry

Root

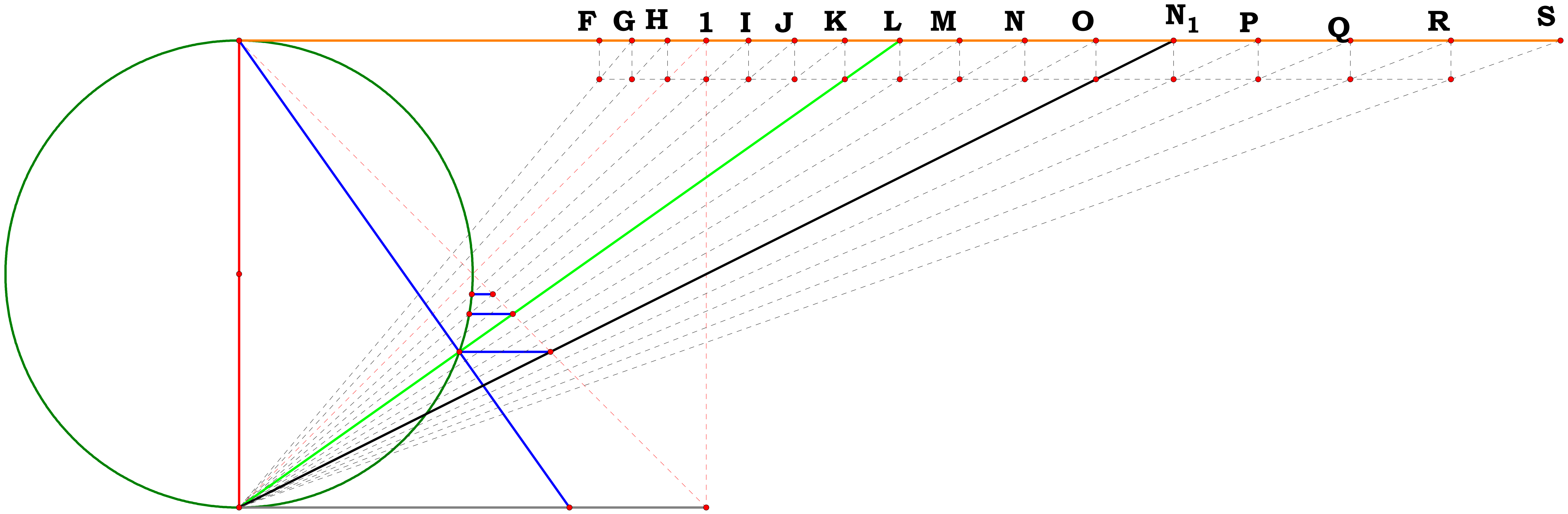
John 312

$N_1 = 2.00000$

$F = 0.77111$
$G = 0.84090$
$H = 0.91700$
$1 = 1.00000$
$I = 1.09051$
$J = 1.18921$
$K = 1.29684$
$L = 1.41421$
$M = 1.54221$
$N = 1.68179$
$O = 1.83401$
$N_1 = 2.00000$
$P = 2.18102$
$Q = 2.37841$
$R = 2.59368$
$S = 2.82843$

$N_1^{\frac{-3}{8}} - F = 0.00000$
$N_1^{\frac{-2}{8}} - G = 0.00000$
$N_1^{\frac{-1}{8}} - H = 0.00000$
$N_1^{\frac{0}{8}} - 1 = 0.00000$
$N_1^{\frac{1}{8}} - I = 0.00000$
$N_1^{\frac{2}{8}} - J = 0.00000$
$N_1^{\frac{3}{8}} - K = 0.00000$
$N_1^{\frac{4}{8}} - L = 0.00000$
$N_1^{\frac{5}{8}} - M = 0.00000$
$N_1^{\frac{6}{8}} - N = 0.00000$
$N_1^{\frac{7}{8}} - O = 0.00000$
$N_1^{\frac{8}{8}} - N_1 = 0.00000$
$N_1^{\frac{9}{8}} - P = 0.00000$
$N_1^{\frac{10}{8}} - Q = 0.00000$
$N_1^{\frac{11}{8}} - R = 0.00000$
$N_1^{\frac{12}{8}} - S = 0.00000$

Square roots? Why not a whole 2N exponential series?



I read a contemporary Algebra Book once and the author claimed that this was not possible, did not exist, in geometry. It is in mine.

Basic Arithmetic In Geometry

Reciprocal

John 312

$N_1 = 2.57245$

$R = 0.38873$

$\frac{1}{N_1} - R = 0.00000$

Stuib for R = -0.52403

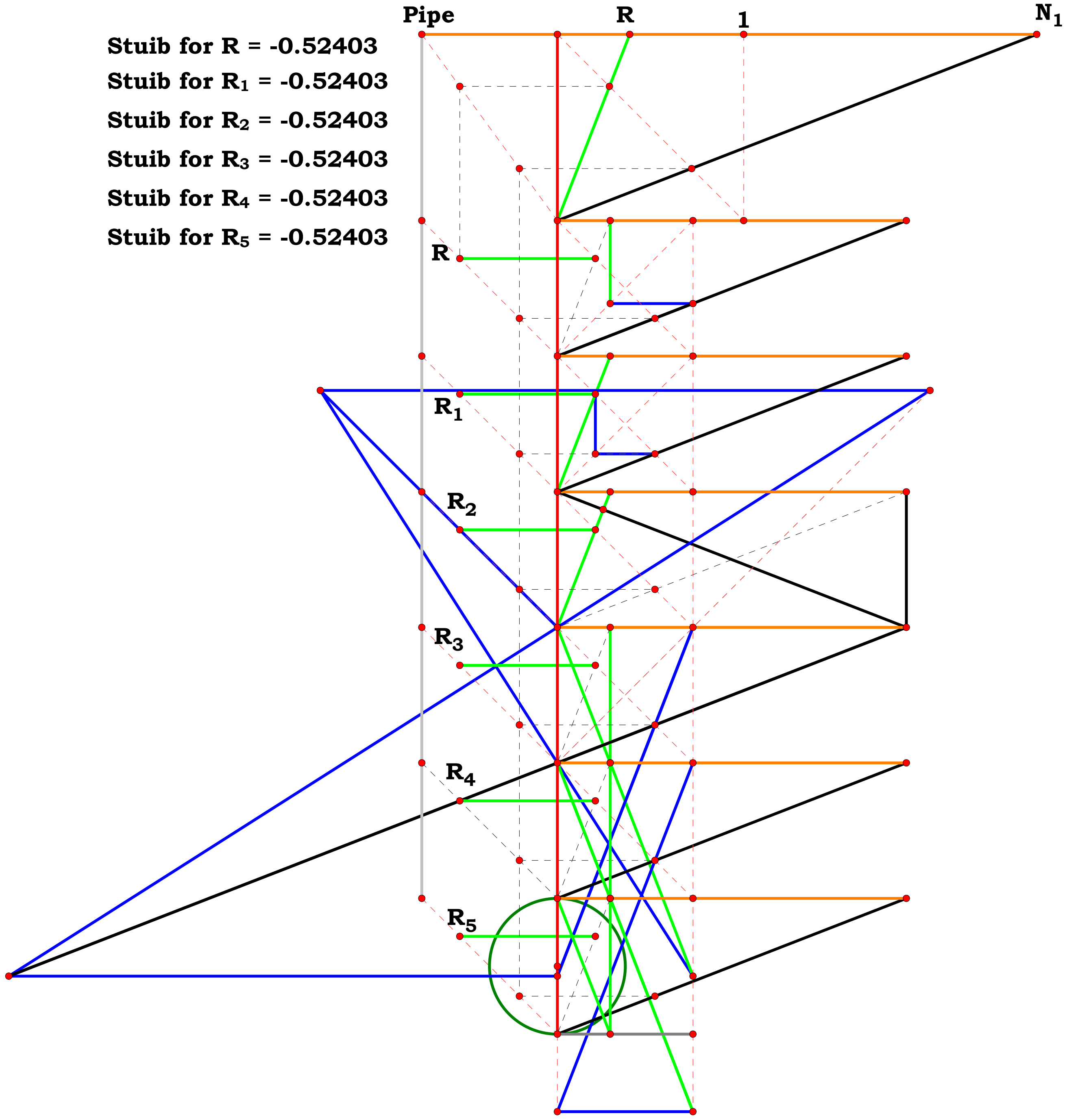
Stuib for R_1 = -0.52403

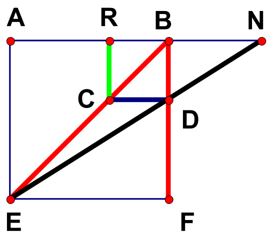
Stuib for R_2 = -0.52403

Stuib for R_3 = -0.52403

Stuib for R_4 = -0.52403

Stuib for R_5 = -0.52403





Unit.

$AB := 1$

Given.

$AN := 3$

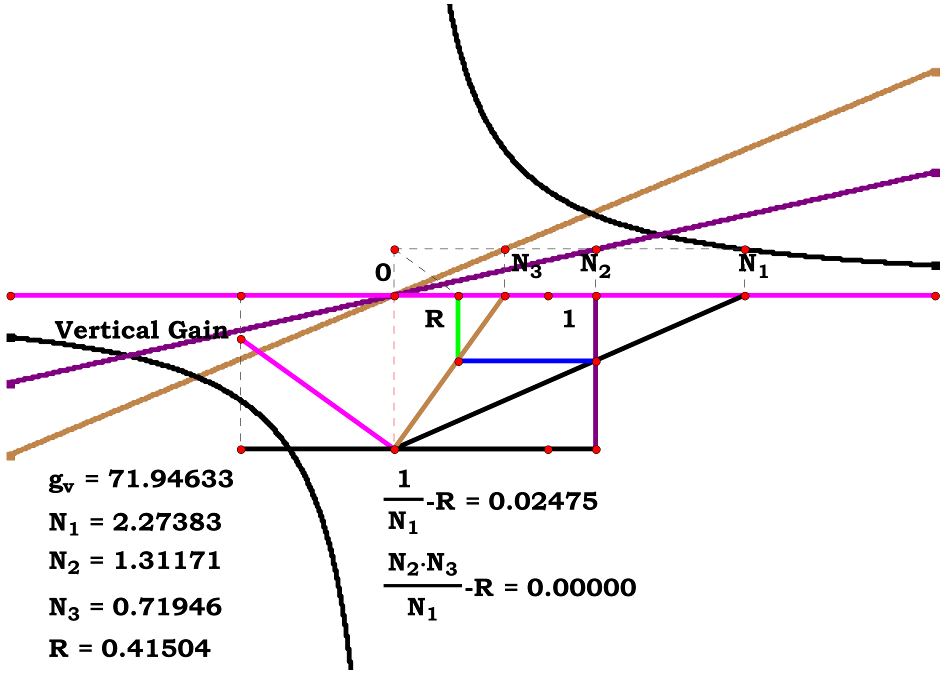
From BAM Sample Dic 1CST3R0

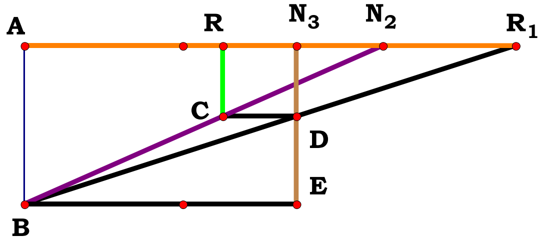
Descriptions.

$$BD := \frac{AN-1}{AN} \quad AR := AB - BD$$

Definitions.

$$AR - \frac{1}{AN} = 0 \qquad AR - AN^{-1} = 0$$





$N_1 := 4$

$N_2 := 3$

$N_3 := 2$

Three Transforms.

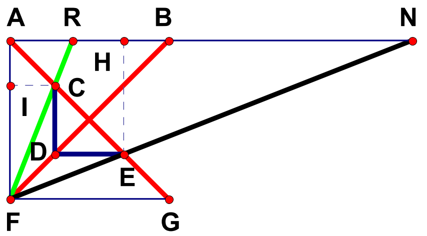
0, 0, 0.	1	1, 2, 0.	$\frac{N_2}{N_1}$
1, 0, 0.	$\frac{1}{N_1}$	1, 0, 3.	$\frac{N_3}{N_1}$
0, 2, 0.	N_2	0, 2, 3.	$N_2 \cdot N_3$
0, 0, 3.	N_3	1, 2, 3.	$N_2 \cdot \frac{N_3}{N_1}$

$$ab := 1 \qquad de := \frac{N_3}{N_1} \qquad cr := ab - de$$

$$rn2 := \frac{N_2 \cdot cr}{ab} \qquad ar := N_2 - rn2$$

Definitions.

$$cr - \frac{N_1 - N_3}{N_1} = 0 \qquad ar - N_2 \cdot \frac{N_3}{N_1} = 0$$



Unit.

$AB := 1$

Given.

$AN := 3$

From BAM Sample Dic 1CST5R2

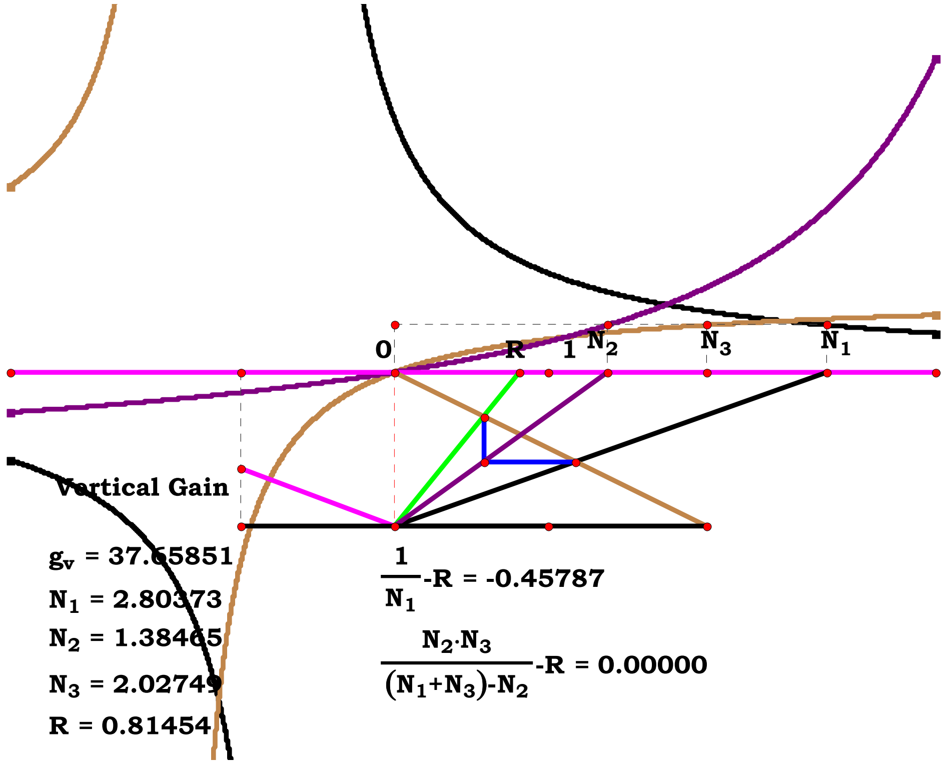
Descriptions.

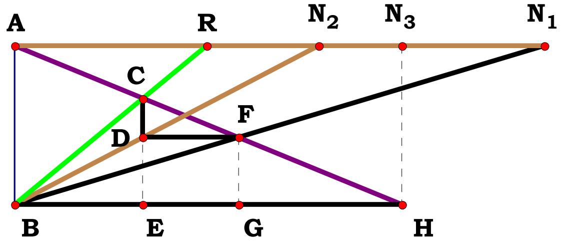
$$AH := \frac{AB \cdot AN}{AB + AN} \quad BH := AB - AH \quad CI := BH$$

$$FI := AH \quad AR := \frac{CI \cdot AB}{FI}$$

Definitions.

$$AR - \frac{1}{AN} = 0$$





$N_1 := 7$

$N_2 := 3$

$N_3 := 2$

$$fg := \frac{N_3}{N_1 + N_3} \quad be := N_2 \cdot fg \quad eh := N_3 - be \quad ce := \frac{eh}{N_3} \quad ar := \frac{be}{ce}$$

Definitions.

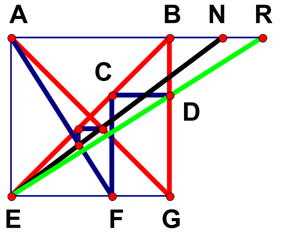
$$be - \frac{N_2 \cdot N_3}{N_1 + N_3} = 0 \quad eh - \frac{N_1 \cdot N_3 + N_3^{\,2} - N_2 \cdot N_3}{N_1 + N_3} = 0$$

$$ce - \frac{N_1 + N_3 - N_2}{N_1 + N_3} = 0 \quad ar - \frac{N_2 \cdot N_3}{N_1 + N_3 - N_2} = 0$$

Three Transforms.

0, 0, 0.	1	1, 2, 0.	$\frac{N_2}{N_1 - N_2 + 1}$
1, 0, 0.	$\frac{1}{N_1}$	1, 0, 3.	$\frac{N_3}{N_1 + N_3 - 1}$
0, 2, 0.	$-\frac{N_2}{N_2 - 2}$	0, 2, 3.	$\frac{N_2 \cdot N_3}{N_3 - N_2 + 1}$
0, 0, 3.	1	1, 2, 3.	$\frac{N_2 \cdot N_3}{N_1 + N_3 - N_2}$

From BAM Sample Dic 1CST6R2



Unit.

$AB := 1$

Given.

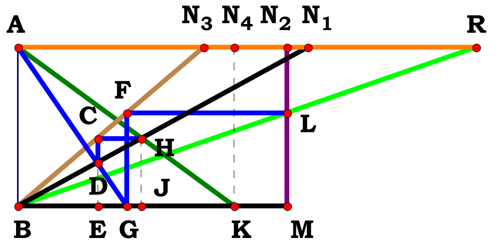
$AN := 3$

Descriptions.

$$EF := \frac{AN}{AN^2 + AN - 1} \qquad BD := AB - EF \qquad AR := \frac{AB^2}{EF}$$

Definitions.

$$AR - \frac{AN^2 + AN - 1}{AN} = 0$$



$N_1 := 5$

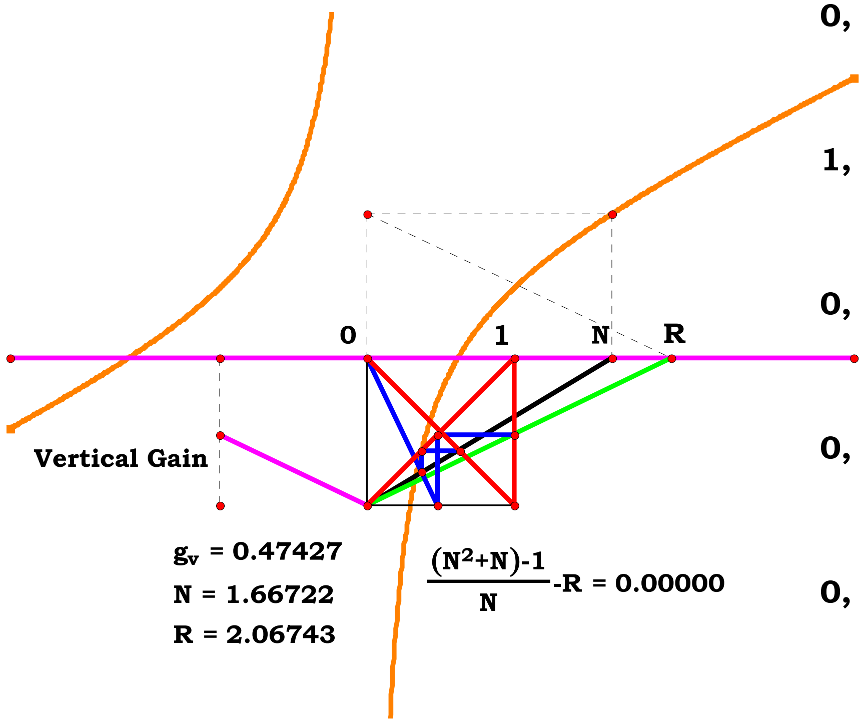
$N_3 := 3$

$N_2 := 4$

$N_4 := 2$

$$hj := \frac{N_4}{N_1 + N_4} \qquad be := N_3 \cdot hj \qquad de := \frac{be}{N_1}$$

$$bg := \frac{be}{1 - de} \qquad fg := \frac{bg}{N_3} \qquad ar := \frac{N_2}{fg}$$



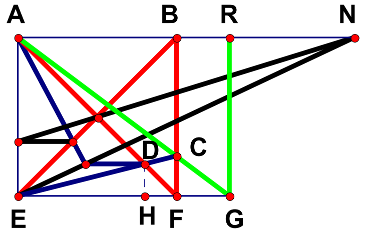
Definitions.

$$be - \frac{N_3 \cdot N_4}{N_1 + N_4} = 0 \qquad de - \frac{N_3 \cdot N_4}{N_1^{\,2} + N_4 \cdot N_1} = 0 \qquad bg - \frac{N_1 \cdot N_3 \cdot N_4}{N_1^{\,2} + N_1 \cdot N_4 - N_3 \cdot N_4} = 0$$

$$fg - \frac{N_1 \cdot N_4}{N_1^{\,2} + N_1 \cdot N_4 - N_3 \cdot N_4} = 0 \qquad ar - \frac{N_1^{\,2} \cdot N_2 + N_1 \cdot N_2 \cdot N_4 - N_2 \cdot N_3 \cdot N_4}{N_1 \cdot N_4} = 0$$

Four Transforms.

0, 0, 0, 0.	1	0, 2, 3, 0.	$2 \cdot N_2 - N_2 \cdot N_3$
1, 0, 0, 0.	$\frac{N_1^{\,2} + N_1 - 1}{N_1}$	0, 2, 0, 4.	$\frac{N_2}{N_4}$
0, 2, 0, 0.	N_2	0, 0, 3, 4.	$\frac{N_4 - N_3 \cdot N_4 + 1}{N_4}$
0, 0, 3, 0.	$2 - N_3$	1, 2, 3, 0.	$\frac{N_2 \cdot \left(N_1^{\,2} + N_1 - N_3\right)}{N_1}$
0, 0, 0, 4.	$\frac{1}{N_4}$	1, 0, 3, 4.	$\frac{N_1^{\,2} + N_4 \cdot N_1 - N_3 \cdot N_4}{N_1 \cdot N_4}$
1, 2, 0, 0.	$\frac{N_2 \cdot \left(N_1^{\,2} + N_1 - 1\right)}{N_1}$	0, 2, 3, 4.	$\frac{N_2 + N_2 \cdot N_4 - N_2 \cdot N_3 \cdot N_4}{N_4}$
1, 0, 3, 0.	$\frac{N_1^{\,2} + N_1 - N_3}{N_1}$	1, 2, 0, 4.	$\frac{N_2 \cdot \left(N_1^{\,2} + N_4 \cdot N_1 - N_4\right)}{N_1 \cdot N_4}$
1, 0, 0, 4.	$\frac{N_1^{\,2} + N_4 \cdot N_1 - N_4}{N_1 \cdot N_4}$	1, 2, 3, 4.	$\frac{N_1^{\,2} \cdot N_2 + N_1 \cdot N_2 \cdot N_4 - N_2 \cdot N_3 \cdot N_4}{N_1 \cdot N_4}$



Unit.

$AB := 1$

Given.

$AN := -3$

From BAM Sample Dic 1CST7R7

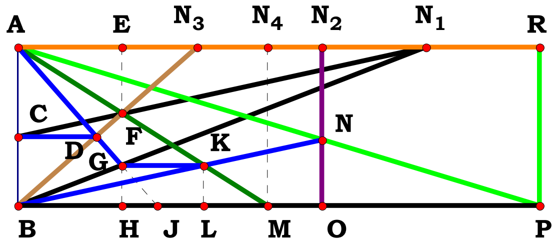
Descriptions.

$$DH := \frac{AN - 1}{AN^2 + AN - 1} \quad EH := AB - DH \quad CF := \frac{DH \cdot AB}{EH} \quad BC := AB - CF$$

$$EG := \frac{AB^2}{BC} \quad AR := EG$$

Definitions.

$$AR - \frac{AN^2}{AN^2 - AN + 1} = 0$$

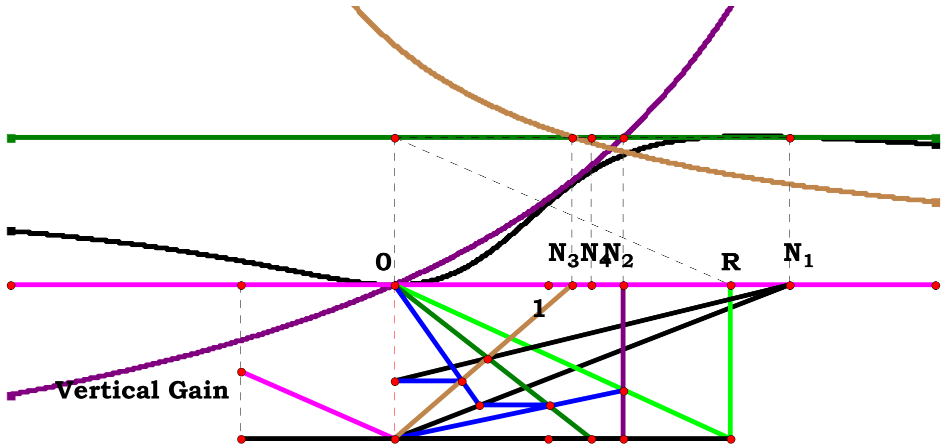


$N_1 := 5$

$N_2 := 4$

$N_3 := 3$

$N_4 := 2$



$g_v = 43.89266$

$N_1 = 2.56476$

$N_2 = 1.48856$

$N_3 = 1.15471$

$N_4 = 1.28278$

$R = 2.18611$

$$\frac{N_1^2}{(N_1^2 - N_1) + 1} - R = -0.87398$$

$$\frac{N_1^2 \cdot N_2}{(N_1^2 - N_1 \cdot N_2) + N_2 \cdot N_3} - R = 0.00000$$

$$ef := \frac{N_3}{N_3 + N_4} \quad ae := N_4 \cdot ef \quad ac := \frac{ef \cdot N_1}{N_1 - ae} \quad cd := N_3 - N_3 \cdot ac \quad bj := \frac{cd}{ac} \quad gh := \frac{bj}{N_1 + bj} \quad bl := N_4 - N_4 \cdot gh \quad no := \frac{gh \cdot N_2}{bl} \quad ar := \frac{N_2}{1 - no}$$

Definitions.

$$ae - \frac{N_3 \cdot N_4}{N_3 + N_4} = 0 \quad ac - \frac{N_1 \cdot N_3}{N_1 \cdot N_3 + N_1 \cdot N_4 - N_3 \cdot N_4} = 0 \quad cd - \frac{N_1 \cdot N_3 \cdot N_4 - N_3^2 \cdot N_4}{N_1 \cdot N_3 + N_1 \cdot N_4 - N_3 \cdot N_4} = 0 \quad bj - \frac{N_1 \cdot N_4 - N_3 \cdot N_4}{N_1} = 0$$

$$gh - \frac{N_1 \cdot N_4 - N_3 \cdot N_4}{N_1^2 + N_1 \cdot N_4 - N_3 \cdot N_4} = 0 \quad bl - \frac{N_1^2 \cdot N_4}{N_1^2 + N_1 \cdot N_4 - N_3 \cdot N_4} = 0 \quad no - \frac{N_1 \cdot N_2 - N_2 \cdot N_3}{N_1^2} = 0 \quad ar - \frac{N_1^2 \cdot N_2}{N_1^2 - N_1 \cdot N_2 + N_2 \cdot N_3} = 0$$

Four Transforms.

0, 0, 0, 0. 1

1, 0, 0, 0. $\dfrac{N_1^2}{N_1^2 - N_1 + 1}$

0, 2, 0, 0. N_2

0, 0, 3, 0. $\dfrac{1}{N_3}$

0, 0, 0, 4. 1

1, 2, 0, 0. $\dfrac{N_1^2 \cdot N_2}{N_1^2 - N_2 \cdot N_1 + N_2}$

1, 0, 3, 0. $\dfrac{N_1^2}{N_1^2 - N_1 + N_3}$

1, 0, 0, 4. $\dfrac{N_1^2}{N_1^2 - N_1 + 1}$

0, 2, 3, 0. $\dfrac{N_2}{N_2 \cdot N_3 - N_2 + 1}$

0, 2, 0, 4. N_2

0, 0, 3, 4. $\dfrac{1}{N_3}$

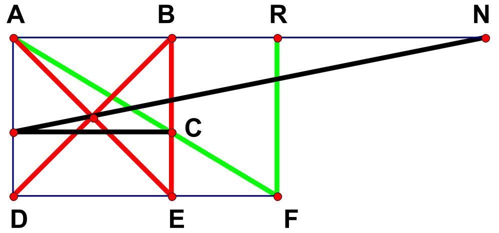
1, 2, 3, 0. $\dfrac{N_1^2 \cdot N_2}{N_1^2 - N_1 \cdot N_2 + N_2 \cdot N_3}$

1, 0, 3, 4. $\dfrac{N_1^2}{N_1^2 - N_1 + N_3}$

0, 2, 3, 4. $\dfrac{N_2}{N_2 \cdot N_3 - N_2 + 1}$

1, 2, 0, 4. $\dfrac{N_1^2 \cdot N_2}{N_1^2 - N_2 \cdot N_1 + N_2}$

1, 2, 3, 4. $\dfrac{N_1^2 \cdot N_2}{N_1^2 - N_1 \cdot N_2 + N_2 \cdot N_3}$



Unit.

$AB := 1$

Given.

$AN := 3$

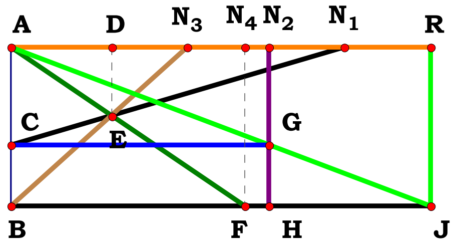
From BAM Sample Dic 1CST7R8

Descriptions.

$$BC := \frac{AN}{2 \cdot AN - 1} \qquad DF := \frac{AB^2}{BC} \qquad AR := DF$$

Definitions.

$$AR - \frac{2AN - 1}{AN} = 0$$

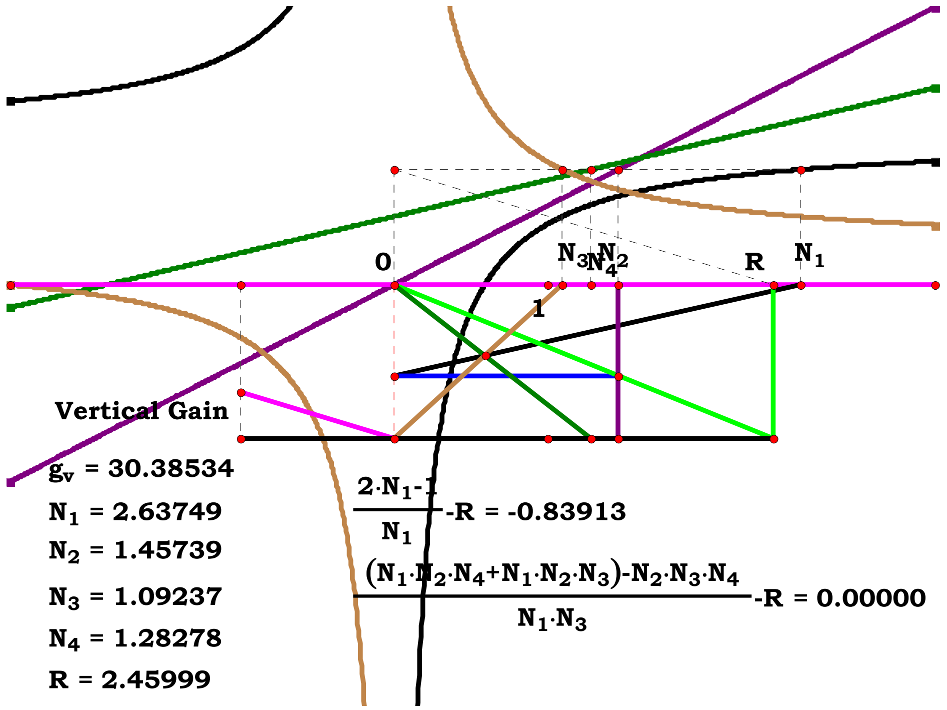


$N_1 := 5$

$N_2 := 4$

$N_3 := 3$

$N_4 := 2$



$g_v = 30.38534$

$N_1 = 2.63749$

$N_2 = 1.45739$

$N_3 = 1.09237$

$N_4 = 1.28278$

$R = 2.45999$

$$\frac{2 \cdot N_1 - 1}{N_1} - R = -0.83913$$

$$\frac{(N_1 \cdot N_2 \cdot N_4 + N_1 \cdot N_2 \cdot N_3) - N_2 \cdot N_3 \cdot N_4}{N_1 \cdot N_3} - R = 0.00000$$

$$de := \frac{N_3}{N_3 + N_4} \qquad ad := N_4 \cdot de \qquad ac := \frac{de \cdot N_1}{N_1 - ad} \qquad ar := \frac{N_2}{ac}$$

Definitions.

$$ad - \frac{N_3 \cdot N_4}{N_3 + N_4} = 0 \qquad ac - \frac{N_1 \cdot N_3}{N_1 \cdot N_3 + N_1 \cdot N_4 - N_3 \cdot N_4} = 0 \qquad ar - \frac{N_1 \cdot N_2 \cdot N_3 + N_1 \cdot N_2 \cdot N_4 - N_2 \cdot N_3 \cdot N_4}{N_1 \cdot N_3} = 0$$

Four Transforms.

0, 0, 0, 0. 1

1, 0, 0, 0. $\frac{2 \cdot N_1 - 1}{N_1}$

0, 2, 0, 0. N_2

0, 0, 3, 0. $\frac{1}{N_3}$

0, 0, 0, 4. 1

1, 2, 0, 0. $\frac{2 \cdot N_1 \cdot N_2 - N_2}{N_1}$

1, 0, 3, 0. $\frac{N_1 - N_3 + N_1 \cdot N_3}{N_1 \cdot N_3}$

1, 0, 0, 4. $\frac{N_1 - N_4 + N_1 \cdot N_4}{N_1}$

0, 2, 3, 0. $\frac{N_2}{N_3}$

0, 2, 0, 4. N_2

0, 0, 3, 4. $\frac{N_3 + N_4 - N_3 \cdot N_4}{N_3}$

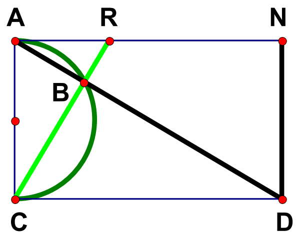
1, 2, 3, 0. $\frac{N_1 \cdot N_2 - N_2 \cdot N_3 + N_1 \cdot N_2 \cdot N_3}{N_1 \cdot N_3}$

1, 0, 3, 4. $\frac{N_1 \cdot N_3 + N_1 \cdot N_4 - N_3 \cdot N_4}{N_1 \cdot N_3}$

0, 2, 3, 4. $\frac{N_2 \cdot N_3 + N_2 \cdot N_4 - N_2 \cdot N_3 \cdot N_4}{N_3}$

1, 2, 0, 4. $\frac{N_1 \cdot N_2 - N_2 \cdot N_4 + N_1 \cdot N_2 \cdot N_4}{N_1}$

1, 2, 3, 4. $\frac{N_1 \cdot N_2 \cdot N_3 + N_1 \cdot N_2 \cdot N_4 - N_2 \cdot N_3 \cdot N_4}{N_1 \cdot N_3}$



Unit.

$AC := 1$

Given.

$AN := 13$

From BAM Sample Dic 2SMT1R3

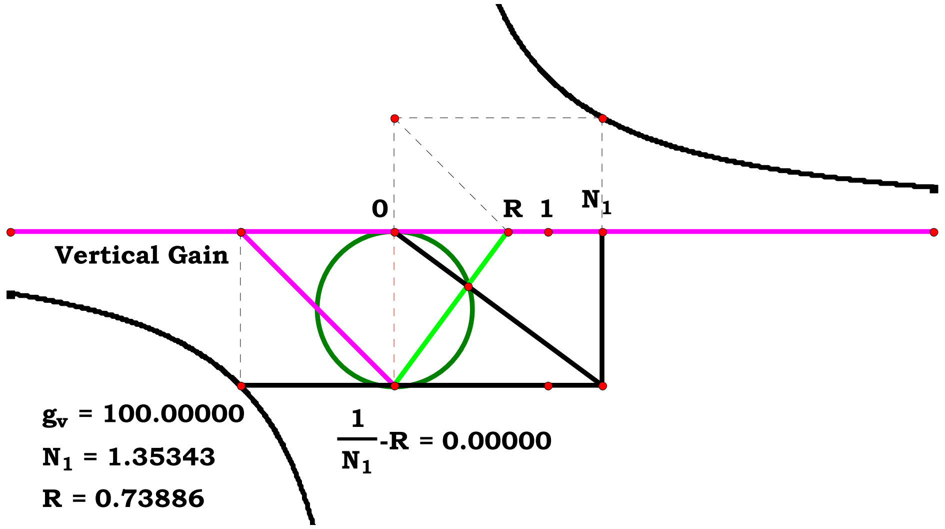
Descriptions.

$$AB := \frac{1}{\left(AN^2+1\right)^{\frac{1}{2}}} \qquad AD := \sqrt{AN^2+AC^2}$$

$$AR := \frac{AD \cdot AB}{AN}$$

Definitions.

$$AR - \frac{1}{AN} = 0$$



Data Piping

10/11/2016

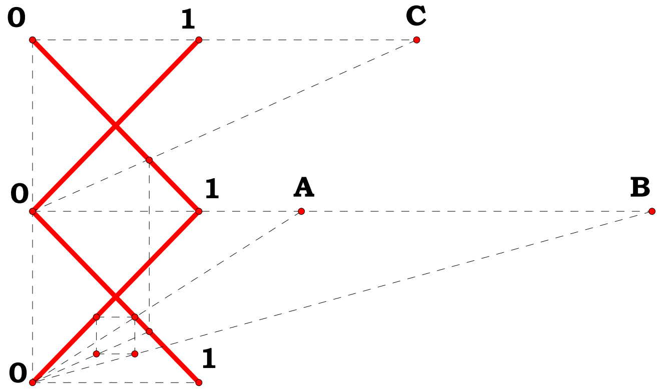
One of the results of my project to provide the constructions for the many propositions in the *Elements* that do not have them, the lines provided which may nor may not be proportional to each other in the book are supposed results, but not constructions, was to lead me to advance my understanding of figure stacking for *Basic Analog Mathematics*.

One of the early recognized benefits of a *Basic Analog Mathematics* figure is stackability so that one can do computations within another figure on another line. The stacking maintains a one-to-one ratio with the given unit over all the figures.

Basic Stacking

01 = 2.20133 cm
0A = 3.55600 cm
0B = 8.19150 cm
0C = 5.07093 cm

A = 1.61538
B = 3.72115
C = 2.30357
$\frac{B}{A} - C = 0.00000$

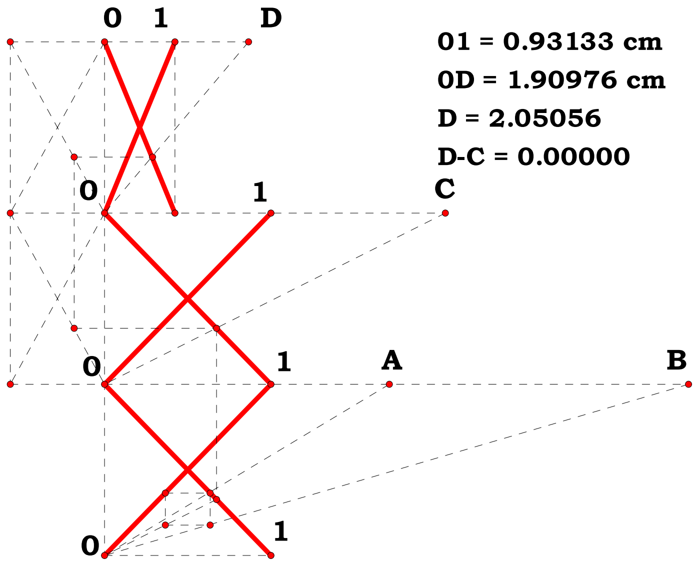


However, to take stackability to a new level, one must recognize that one can pipe results to a stacked figure and also, simultaneous choose an independent unit for that line of computation while have no effect on the results. Thus if one desires to project the results for the construction of a figure, they can do so quite independently of units chosen to do the math in *Basic Analog Mathematics*.

Proportional Stacking

01 = 2.20133 cm
0A = 3.76767 cm
0B = 7.72583 cm
0C = 4.51397 cm

A = 1.71154
B = 3.50962
C = 2.05056
$\frac{B}{A} - C = 0.00000$



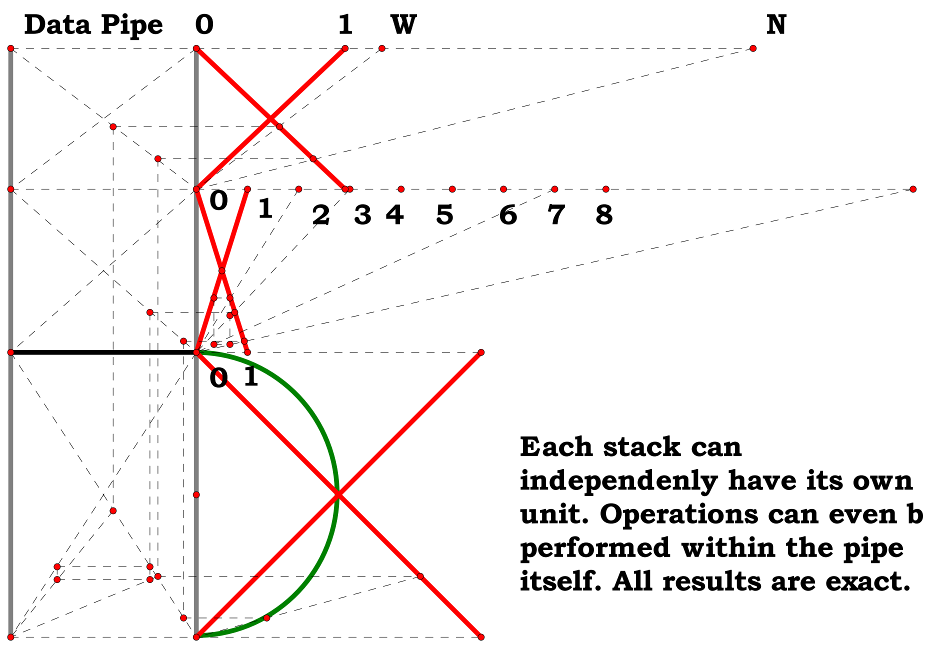
01 = 0.93133 cm
0D = 1.90976 cm
D = 2.05056
D-C = 0.00000

One can see that this aids in building geometric figures which are in fact, very complex computational computers. Thus complex computational analog computers can constructed, which, if I am not mistaken, will eventually lead to the realization of holographic analog computing at speeds unimagined at this time.

Data Piping.

01 = 1.96850 cm
0N = 7.36545 cm
0W = 2.45515 cm

N = 3.74166
N^2 = 14.00000
W = 1.24722 $(W \cdot 3)^2 = 14.00000$



Each stack can independenly have its own unit. Operations can even be performed within the pipe itself. All results are exact.

All of legitimate mathematics are derived from the physical world—each concept geometrically demonstrable. Thus, all legitimate mathematics are demonstrable in the analogic of geometry—through *Basic Analog Mathematics*. The information to construct the figure, that of proportion between parallel lines is actually presented in Euclid's Elements Book 1. So, all that is needed to understand mathematics is presented by the end of Book 1, and the results of the implication of proportion is explored throughout the rest of the work.

Series Notebook

John Clark

Friday, November 8, 2019

John 312

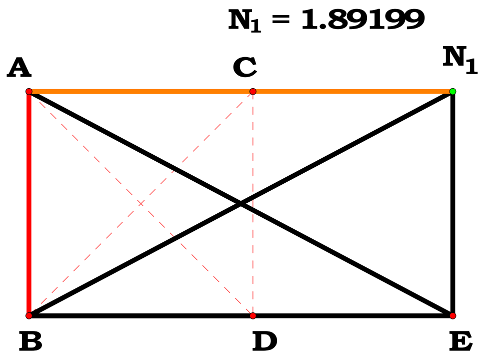
Series.

Pre-ramble.

This project is comprised on the few sketches I did with series in mind, arithmetical and geometric. Factually, one can apply any equation recursively for a series.

This is the first time I will actually do the logical write up of these figures, previous to now, I putzed the equations, meaning, most of the time, I could figure them out without the step by step formal process. Although my results are correct, they may not, sometimes, be in the best format. I example another approach to putzing in the little section called Brain Farts.

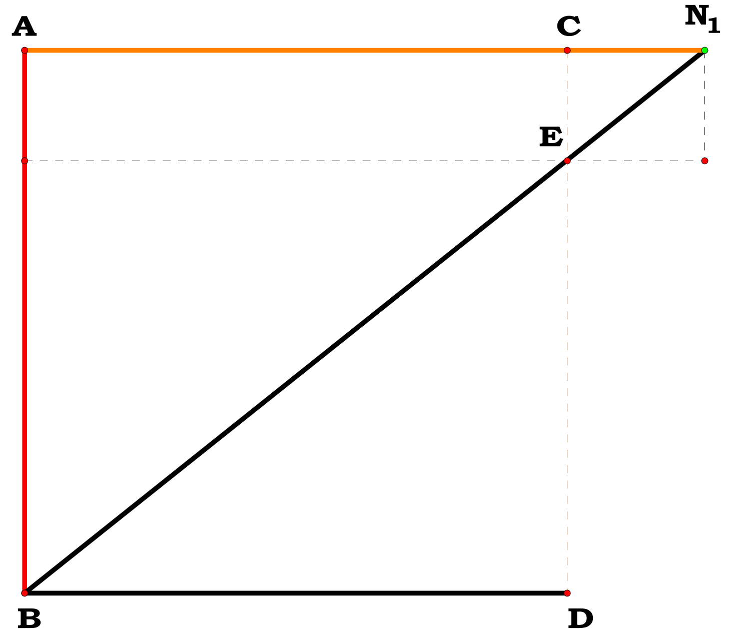
The original plan, and that plan is still effective but not yet fulfilled, is on this wise. Every point in Jacob's Ladder, which is what I call the figure, has a fixed number of operational tails in relation to the ladder itself. Example:



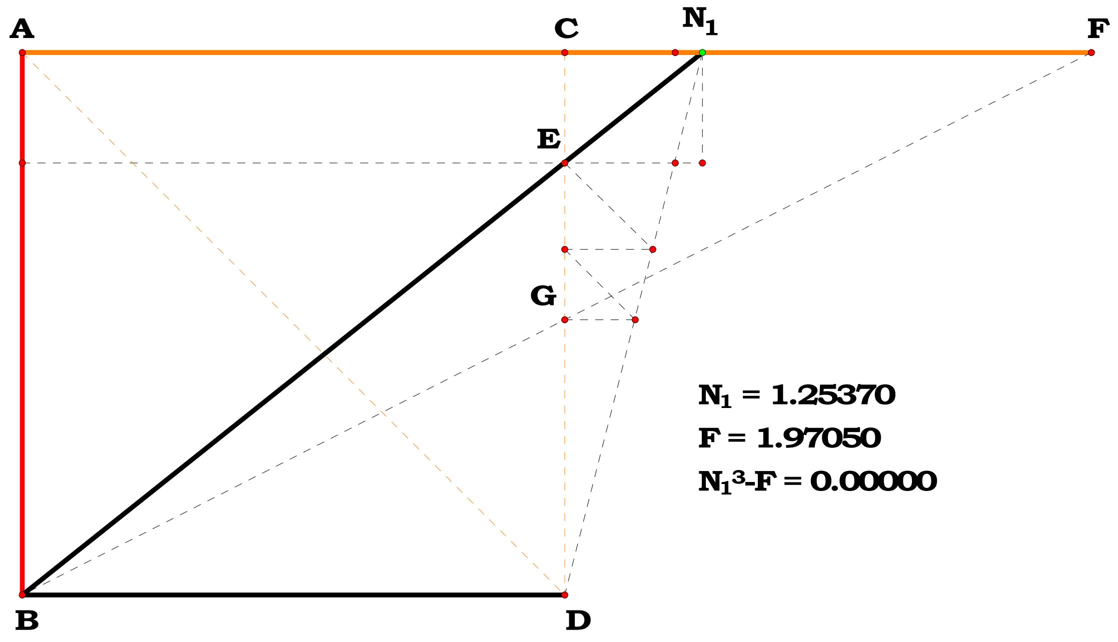
The Unit, AB, AC, AD, BD, CD, BC. And N_1, AN_1, BN_1, AE, BE, $1N_1$, etc., and therefore, in doing simple series to work the series from the fixed produced intersections. Each book, was to target a specific operational tail, or its multiple. And, for projecting a result, one has the source of either A or B for the origin. Each of these decisions produces a different equation. So, when thinking about a value, one learns to think about a value and the possible configurations it could take in the ladder, or again, a value and its operation tail. In arithmetic, or algebra, 1 is simply 1. Here, 1 presents us with a set of different opportunities, even though apparently small.

All of this is well and fine, except when one is simultaneously trying to learn a lot about different configurations and simply must take off on a tangent and explore possible configurations, knowing that, circumstances permitting, one has to come back to the original design. And so, even though the notebooks start with a design in mind, they will degenerate into simple log books of ideas, at least at this time.

One of the other items which relate to the concept of operational tails, which comes to mind in this work, which I have not logged over the years is something quite simple. Let me demonstrate.



Operations, are, in the simple, just ways of manipulating a unit. Let us say that I wanted to know at what angle I would have to project from B, to hit the line upon which the segment AC rests, producing the cube of N_1. Now, if I were a clever sailor, I would use trig or something. However, I was just a dumb factory worker, and I know nothing of working angles using that abomination of dividing a circle by degrees. No, I am too stupid for that, my protractor, fortunately, had a little hole in it which I could insert the tip of my pencil and make it into a whirly-gig. Instead, I, simply and straight forwardly, work my unit, in this case CD, like this:



I would work on the unit line CD, and project to F, knowing that one can work the unit by recursion in both directions. And so, I, being as simple as I am, would not even imagine something as silly as trigonometry, nor would a classroom bit littered with bits of plastic from broken protractors. I would, instead, learn the different ways of doing the math with the unit in both directions, in short, arithmetically and on the unit itself, geometrically. Now, instead of slopping an answer in terms of arithmetic, I get an exact answer using geometry. In the end, one learns to understand, that in a two dimensional system of determinates, one expresses every results in terms of a ratio to the unit, in this case, BD to DG, a result one does not have to conjure up while getting sea-sick, but is right in front of our face.

In geometry and algebra, one does not learn to think in terms of working an idea using obvious objects such as the ones one can construct in geometry. No one has to take a course on using a sextant, or trig, if one just learnt the damn math they were given. When looking for a result, one always starts with a standard given. In the above example, N_1, was the given standard.

It is simply amazing. Trigonometry pre-dates formal geometry, yet it is still being used, and used to produce such rubbish as non-Euclidean Geometry, which, factually, a grade-schooler should have been taught how to demonstrate its fallacies by using standard linguistic concepts.

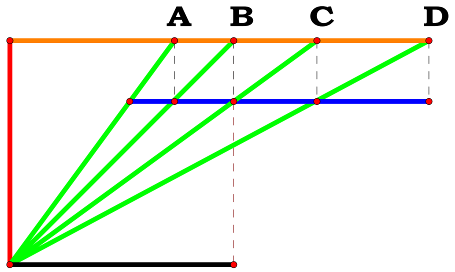
Using Jacob's Ladder, one is always holding onto, or standing upon, some rung, brace, or operational tail, and like any construction worker, riveting our results in place.

Series Basics.

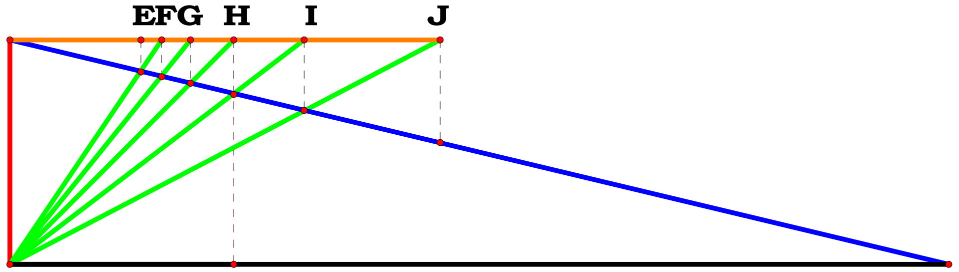
Linguistically, we deal with two distinct concepts and the different manners they may be expressed, same and different, form and material, etc, each based on one of the paradigms of not only our own biology, but also the definition of any thing what-so-ever. This division between same and different is expressed in a particular manner in regard to basic recursion and the center of mythology by many so called intellectuals who could not, at times, demonstrate the least bit of conceptual integrity. Claiming, in some manner, that these two distinct concepts do not apply in some particular domain of reasoning is factually one method of determining that someone is irrational. Take for example the fact that given any two segments in a plane, those segments are either parallel to each other or angled. These two states are simply fact, facts which mystics deny even though they are present to one's senses constantly.

The factual situation of parallel and angle express, within Jacob's Ladder, the two most fundamental types of mathematical series, arithmetic and geometric, each one actually performed either on a parallel, or an angled line as such:

Geometric



Arithmetic



We name things, and we name the parts of things as we examine that thing further. How can we change the naming convention to keep pace with our process of examination, our perspective, our field of view? What cannot be changed is, of course, our unit, or standard name for a thing. Exponential notation is one method and it is relatively straight forward, another method is fractional notation, which is often not explained overly well.

Any difference, some like the word value, can be represented by using some name such as δ. This is the idea of pairing an index, δ, with some analog information or our original simple ordered naming convention of enumeration, 1, 2, 3, etc. δ, on the other hand can always be represented as $\frac{A}{B}$:—$\frac{1}{1}$, $\frac{2}{1}$, $\frac{3}{1}$, etc. Or again, one can change how one indexes the magnitude, or divisions of a thing, however, that index will be expressed as a proportional, we can name a thing simply, or proportionally, the names are equal in regard to the unit concept, however, what changes is the precision, or our ability to index smaller, or larger, parts relative to our starting unit:—this has also been called *Set Mechanics*. True *Set Mechanics* teaches the management of the naming convention itself, starting with the Unit, or standard concept of *A Thing* and explaining how to pair the logic with operations to expand the original naming convention. Or, on a tangent, all you have probably read about so called *Set Theory* has consisted of half-baked gibberish. Proportional expressions of a thing affords us a way to change our indexing system in a unique way, instead of indexing just by units alone, we can index by units and unit operations such as $\frac{A}{(B\ operand\ Index(\delta))}$. In simple arithmetic, one only sees what is called a decimal, however, algebraically, one retains the form of the indexing system. So, instead of counting 1, 2, 3, 4, our indexing system now blossoms while retaining the fact that every index in the system is still derived from a unit. In short, one is learning different methods of indexing the same old analog information, what is changing is our field of view of that information, or again, our awareness, or perception of the parts of some thing. This is not just renaming a name, but changing the precision of our naming convention relative to the unit concept to match our perception of a thing's parts. Or again, from enumerating units, to enumeration proportionals to a unit. It is a method of taking a set and making subsets, or a thing, and parts of a thing. We do not learn fractions, or multiples, we learn how to manipulate the indexing systems we use to manage information as our perception, or examination of that thing changes. Managing information starts with managing the logic, or managing the manager. Our indexing system can now keep up with our process of examining our reality. We have added to our language skills, proportional indexing, or naming.

Behavior.

Learning Language not only entails the ability to describe figures using logic systems, but in constructing these two figures such as to regulate their behaviors: For example, starting points, ending points, and number of iterations between given points. For each of these, one has to build controlling structures, the analogic, and their names, the logic. One can say, doing the math, or factually, it is just what a mind is designed to do in every situation, learning and controlling the behaviors of ourselves and the objects around us in order to favor life.

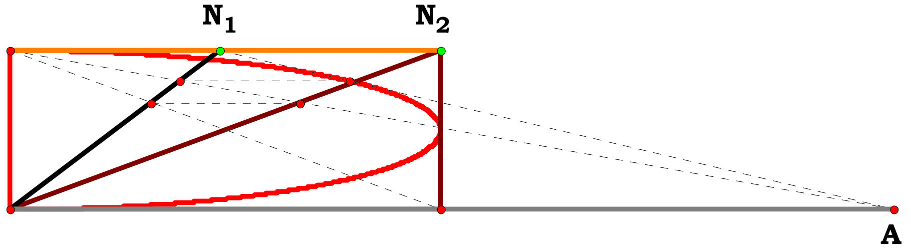
This little section has been on my mind since the time I had worked on the notebooks. I had to leave off the explorations at the time but I wanted to at least write up the sketches for in order to form a small pool of things by which to acquire some experience with before the topics could be more formally organized, so this is it, for now.

$AB := 1$

$N_1 := 3.31672$

$N_2 := 2.53931$

From any point N₁ draw the tangent to the ellipse N₂. Or given the square N₂ divide it by N₁.



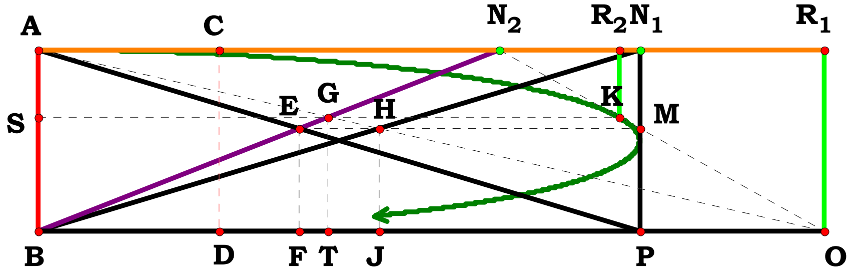
$N_1 = 1.32088$

$N_2 = 2.71076$

$A = 5.56312$

$\frac{N_2^2}{N_1} - A = 0.00000$

Although I wrote this up in The Curver of the Equation, let me do it again, from a different starting point, pointing out other relationships. Not to mention, simplified and that I will make N_1 the ellipse.



$N_1 = 3.31672$

$N_2 = 2.53931$

$R_1 = 4.33214$

$R_2 = 3.20184$

One can see that there is a number of pathways, starting from N_1 by which to construct the figure and it is independent of any second variable. For example, I can use the operational tail of N_1 and take any point H on it. From H, I can go to either M or E. Or I can take N_1 and any N_2 and find everything, which is what I will be doing here. Each path one takes will, naturally, produce a both a logical and an analogical path to the same conclusion.

$$BF := \frac{N_1 \cdot N_2}{N_1 + N_2} \qquad EF := \frac{BF}{N_2} \qquad BJ := N_1 \cdot EF \qquad BO := \frac{BJ}{1 - EF} \qquad R_1 := BO$$

$$BT := \frac{BO \cdot N_2}{BO + N_2} \qquad GT := \frac{BT}{N_2} \qquad GK := BO \cdot (1 - GT) \qquad SK := GK + BT \qquad R_2 := SK$$

$$R_1 = 4.332134 \qquad R_2 = 3.20184$$

$$R_1 - \frac{N_1^{\,2}}{N_2} = 0 \qquad R_2 - \frac{2 \cdot N_1^{\,2} \cdot N_2}{N_1^{\,2} + N_2^{\,2}} = 0$$

Therefore, even though, given only the two points, the logic gives us a means of drawing the figure for the solution.

Now, if given N_2 and R_2 what would N_1 be? Given just 2 points, or any two values, it would not be possible, however, since we have the equation, we can now draw it to find the figure.

$$N_1 - \frac{N_2 \cdot \sqrt{R_2 \cdot (2 \cdot N_2 - R_2)}}{2 \cdot N_2 - R_2} = 0$$

$N_1 = 3.59613$

$N_2 = 2.51727$

$2 \cdot N_2 = 5.03454$ $\quad$ $B = 5.03454$

$(2 \cdot N_2) - N_1 = 1.43841$ $\quad$ $C = 1.43841$

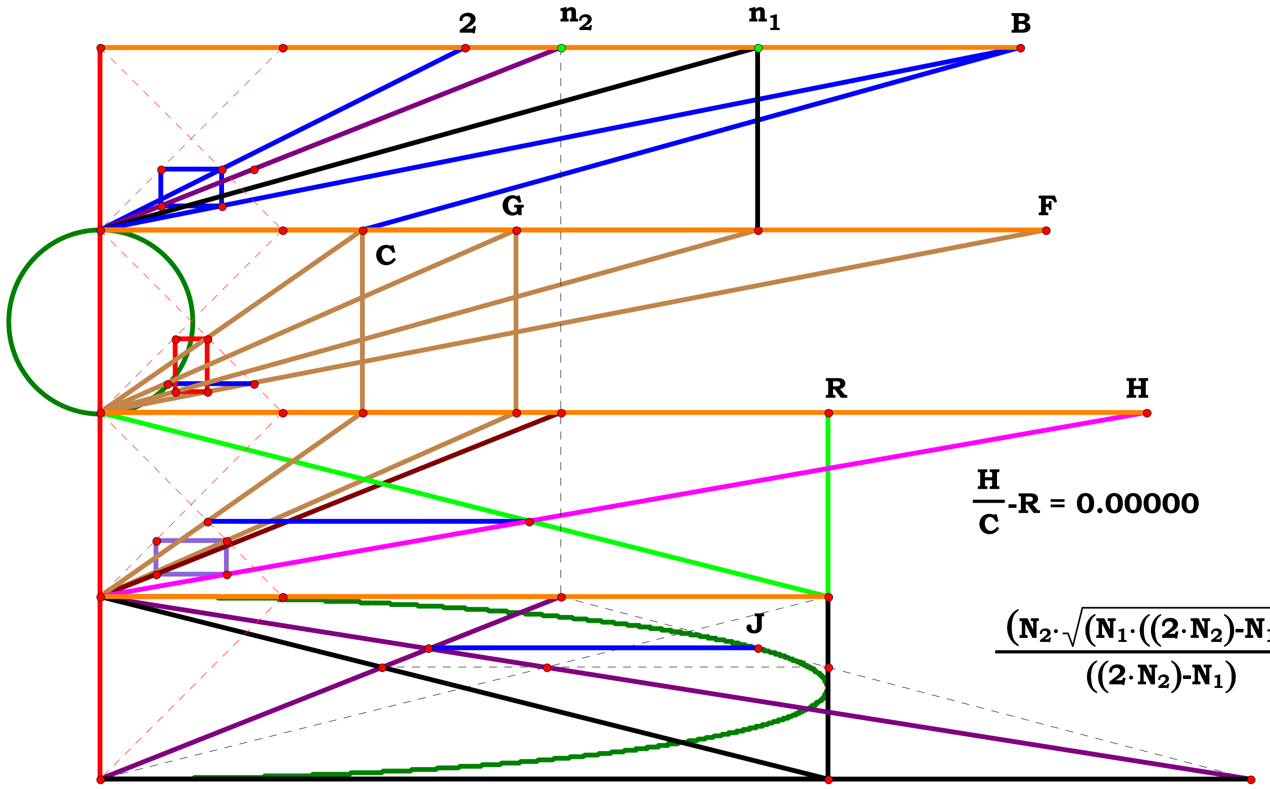
$N_1 \cdot ((2 \cdot N_2) - N_1) = 5.17272$ $\quad$ $F = 5.17272$

$\sqrt{(N_1 \cdot ((2 \cdot N_2) - N_1))} = 2.27436$ $\quad$ $G = 2.27436$

$N_2 \cdot \sqrt{(N_1 \cdot ((2 \cdot N_2) - N_1))} = 5.72519$ $\quad$ $H = 5.72519$

$\frac{N_2 \cdot \sqrt{N_1 \cdot (2 \cdot N_2 - N_1)}}{2 \cdot N_2 - N_1} = 3.98021$ $\quad$ $R = 3.98021$

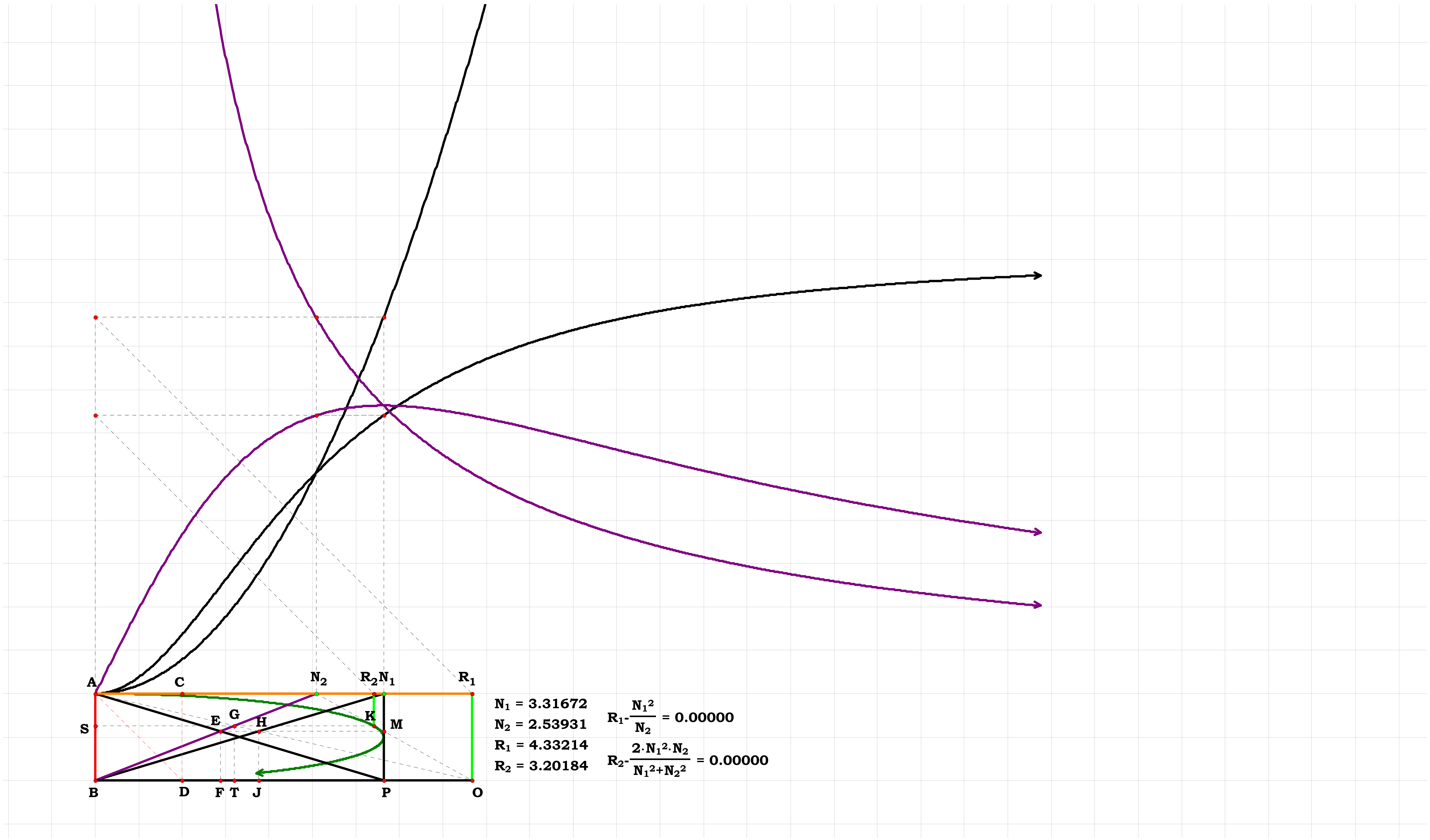
$J - N_1 = 0.00000$ $\quad$ $J = 3.59613$



$\frac{H}{C} - R = 0.00000$

$\frac{(N_2 \cdot \sqrt{(N_1 \cdot ((2 \cdot N_2) - N_1))})}{((2 \cdot N_2) - N_1)} - R = 0.00000$

Therefore, any point, on any circle or ellipse, may be espressed as a ratio between the two dimensions of a plane.
Both an ellipse and a circle are two-dimensional linear functions, one can say that it is the loci of such and such points; in either case, it is not *a line*. Every segment is of one-dimension, or linear.



$N_1 = 3.31672$

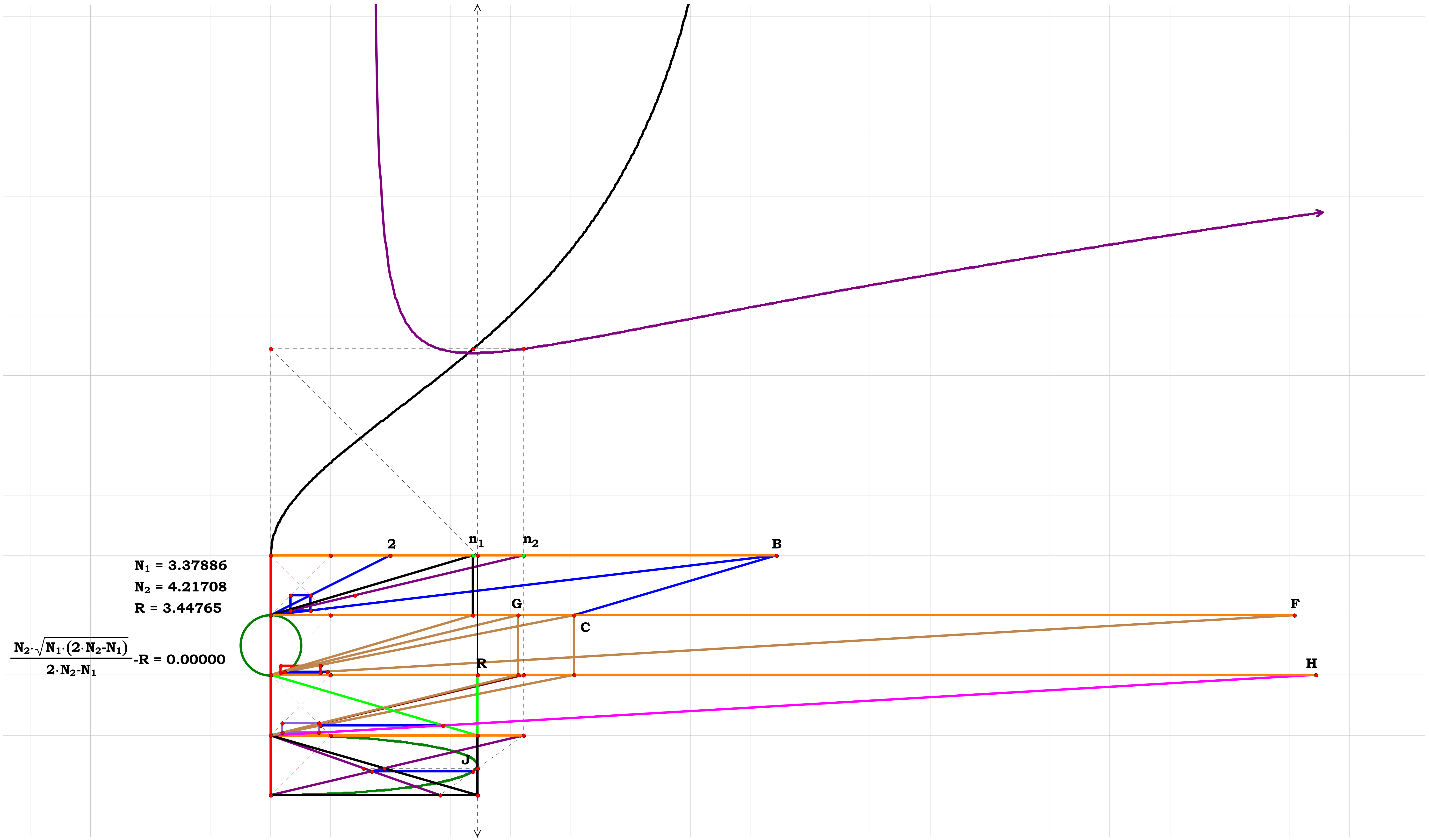
$N_2 = 2.53931$

$R_1 = 4.33214$

$R_2 = 3.20184$

$$R_1 - \frac{N_1^2}{N_2} = 0.00000$$

$$R_2 - \frac{2 \cdot N_1^2 \cdot N_2}{N_1^2 + N_2^2} = 0.00000$$

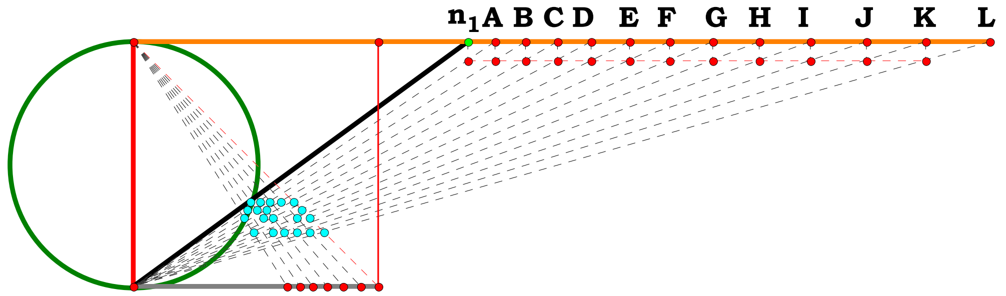

2
n_1
n_2
B
N_1 = 3.37886
N_2 = 4.21708
R = 3.44765
G
F
C
$\frac{N_2 \cdot \sqrt{N_1 \cdot (2 \cdot N_2 - N_1)}}{2 \cdot N_2 - N_1}$-R = 0.00000
R
H
J

Simple Geometric Series.

During my randome excursion into textbooks, I came across a statement by one author that exponential notation was not demonstrable, or abstractable from geometry. However, when I read that statement I reached a different conclusion, that the author could not draw his way out of a paper bag. It really does not take that much playing with basic geometric tools to discover a wealth of figures by which to develop geometric series. I will start with a simple root figure and add a bit of recursion. One will note that they can do a figure demonstrating both so called positive exponential series and negative with the same figure, or in short, the whole of basic exponential notation.

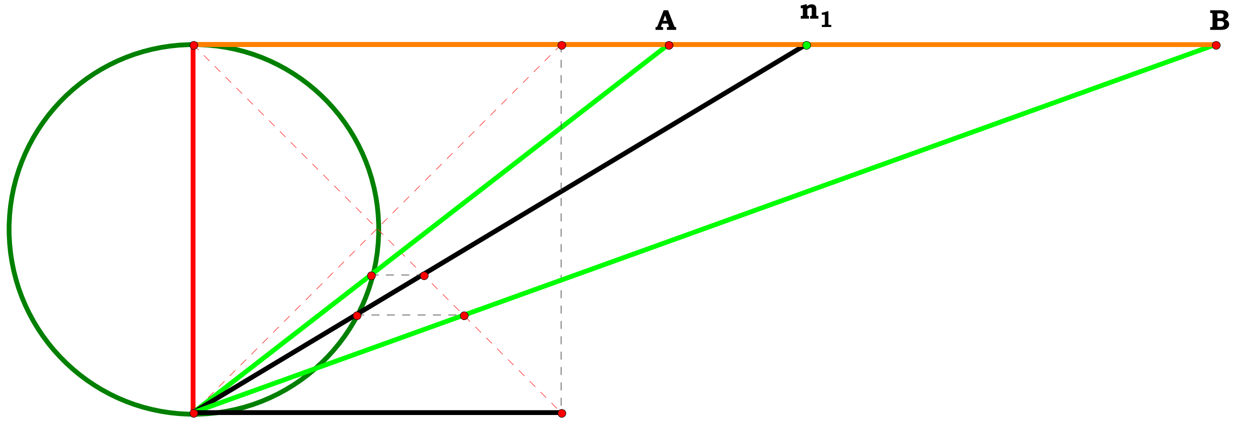
A = 1.47803	$N_1^{1.25}$-A = 0.00000
B = 1.59816	$N_1^{1.5}$-B = 0.00000
C = 1.72805	$N_1^{1.75}$-C = 0.00000
D = 1.86850	N_1^{2}-D = 0.00000
E = 2.02036	$N_1^{2.25}$-E = 0.00000
F = 2.18457	$N_1^{2.5}$-F = 0.00000
G = 2.36212	$N_1^{2.75}$-G = 0.00000
H = 2.55410	N_1^{3}-H = 0.00000
I = 2.76169	$N_1^{3.25}$-I = 0.00000
J = 2.98615	$N_1^{3.5}$-J = 0.00000
K = 3.22885	$N_1^{3.75}$-K = 0.00000
L = 3.49128	N_1^{4}-L = 0.00000

N_1 = 1.36693



N_1 = 1.66534

A = 1.29048	$\sqrt{N_1}$ = 1.29048	$\sqrt{N_1}$-A = 0.00000
B = 2.77337	N_1^2 = 2.77337	N_1^2-B = 0.00000



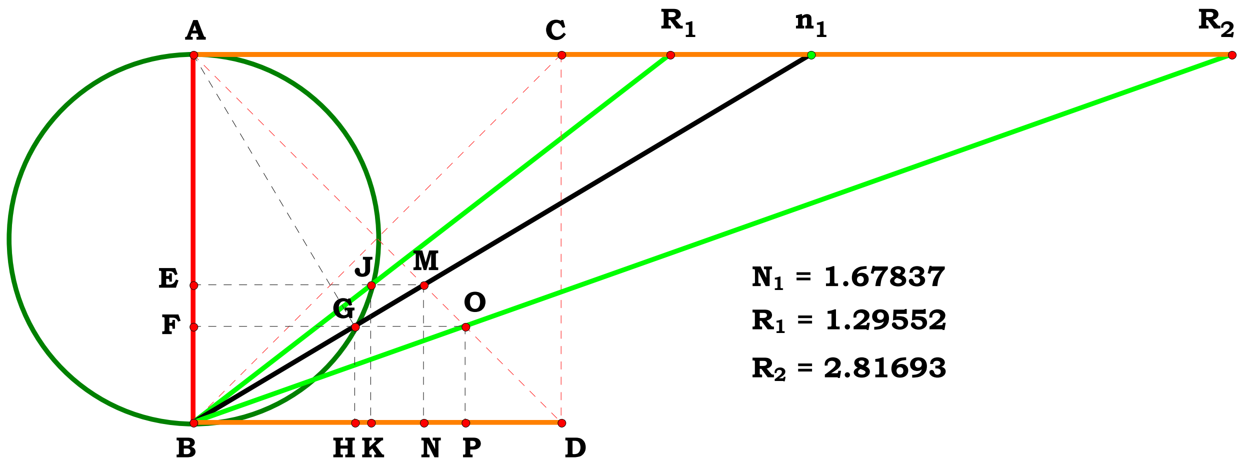
One can see that one of the operational tails can produce two results using the operational tail of the unit and the units circular function or circle for short.

The basic figure, where the circle is added to the unit example, can be understood as the pair of the unit and the primary unit function traditionally called a circle. Or, again, one can view the circle as the operational tail of the primitive linear function.

Each of the results also have the same option for development, thus one can, using the area of the operational tails, simply draw to their hearts content simple geometric series. And, if we make the unit a veriable or second input, one can start to complicate things. Then by tossing a function on the second, well one can generate all the head work they want. One can see, by the dual splitting of our options, why the results is a factor of 2. This may be a hint as to how to formulate series using a function on the unit and after the first split, switching to the unit for further recursions, or whatever one likes.

$$AB := 1$$

$$N_1 := 1.67837$$



$N_1 = 1.67837$

$R_1 = 1.29552$

$R_2 = 2.81693$

$$MN := \frac{1}{N_1 + 1} \qquad EJ := \sqrt{MN \cdot (1 - MN)}$$

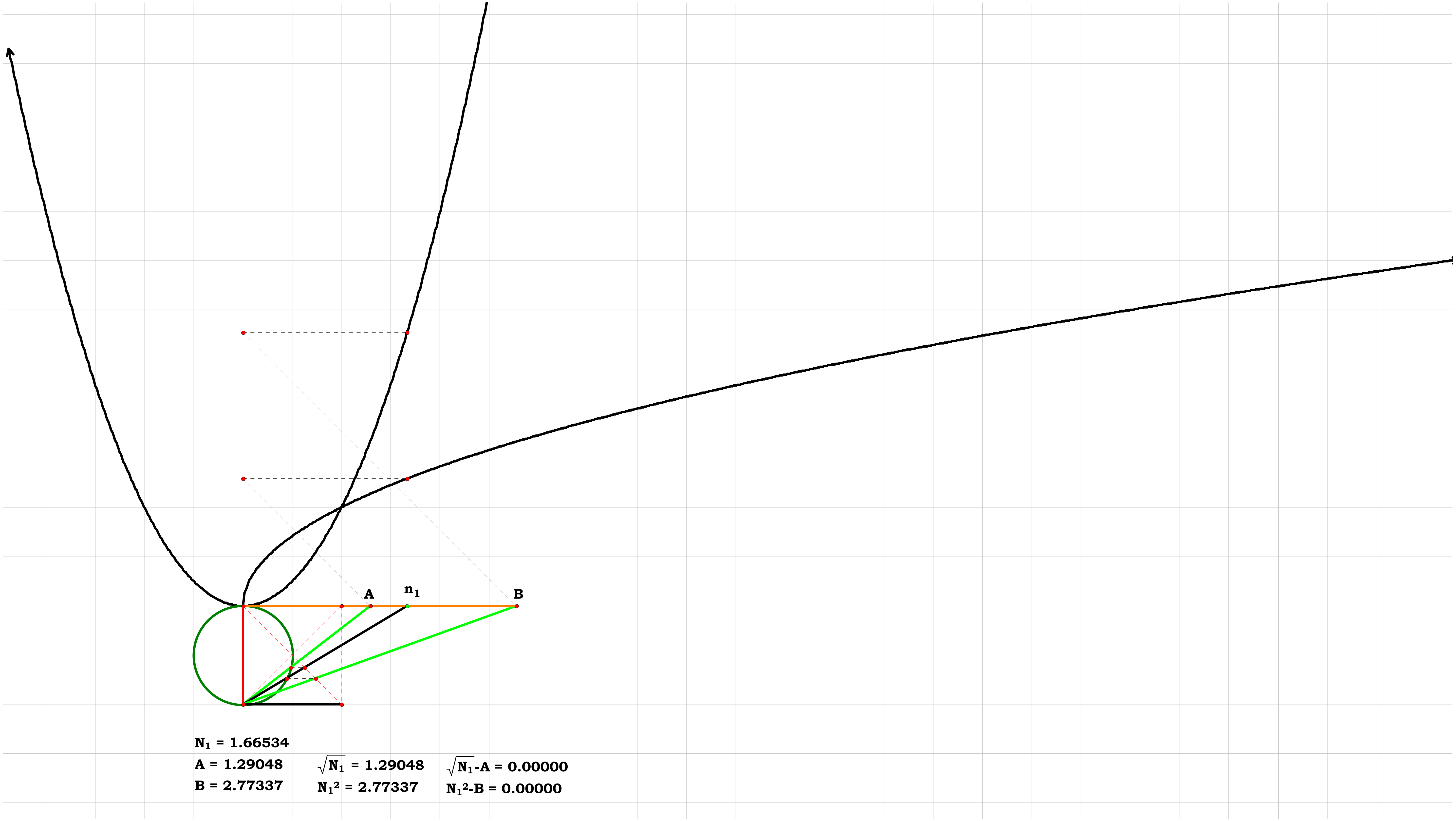
$$R_1 := \frac{EJ}{MN} \qquad R_1 - \sqrt{N_1} = 0$$

$$BN_1 := \sqrt{AB^2 + N_1^2} \qquad BG := \frac{AB^2}{BN_1}$$

$$FG := \frac{N_1 \cdot BG}{BN_1} \qquad GH := \frac{FG}{N_1}$$

$$R_2 := \frac{1 - GH}{GH} \qquad N_1^2 - R_2 = 0$$

Thus, one should realize, as soon as one is given the circle, they are given a linear function which automatically implies the importation of the so called Pythagorean Theorem. Thus, the so called theorem is just one results of what was given as soon as one had taken the original function. The fact of the matter is, one need not even mention it as it is one of a group of results. And, as one is given the circle, what is implied is, when one realize that the unit tail in the figure can be used to extrapolate a second variable, that the ellipse is a given also, or again, a geometric tool is that tool which produces one, and only one, difference between two points, or again, one in which is covered by the concept of complete induction of the unit. The whole train of thought which leads to discovering what a circle is, is not possible when one is thinking arithmetically, thought has to evolve to become inclusive of proportional reasoning which brings in multiplication and division, or again, the root functions. Proportion is a given as soon as one starts using the circle or the primitive unit function.



$N_1 = 1.66534$

$A = 1.29048$

$B = 2.77337$

$\sqrt{N_1} = 1.29048$

$N_1^2 = 2.77337$

$\sqrt{N_1} - A = 0.00000$

$N_1^2 - B = 0.00000$

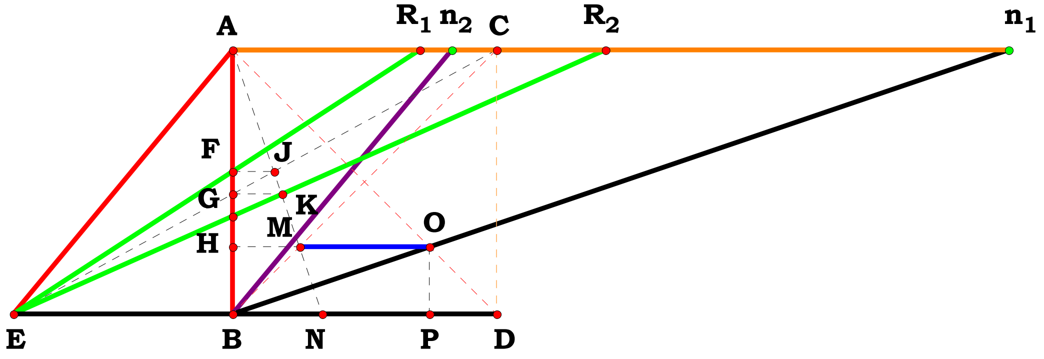
$AB := 1$

$N_1 := 2.93308$

$N_2 := .82839$

Sketch from 062412

One will notice that this is a geometric series which uses a second variable to deterine the point from which to project the series from. One may also notice, the vanishing point for the series, as shown in the second figure remains at 0 no matter what value one sets for either variable. One can manually adjust the second veriable in order to produce any number of proportionals within a given distance which means that a controlling structure to do exponential series can be plugged into the figure, if one knew what that plugin is.



$N_1 = 2.93308$
$N_2 = 0.82839$
$R_1 = 0.70843$
$R_2 = 1.41157$

$$BP := \frac{N_1}{N_1 + 1} \qquad AH := BP \qquad HM := 1 - AH \qquad BN := \frac{HM}{AH}$$

$$BE := N_2 \qquad BG := \frac{N_2}{N_2 + 1} \qquad AG := 1 - BG \qquad GK := BN \cdot AG$$

$$R_2 := \frac{BE + GK}{BG} - N_2 \qquad R_2 = 1.411568 \qquad R_2 - \frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2} = 0$$

$$BF := \frac{N_2 + BN}{N_2 + 1 + BN} \qquad R_1 := \frac{BE}{BF} - N_2 \qquad R_1 = 0.708432$$

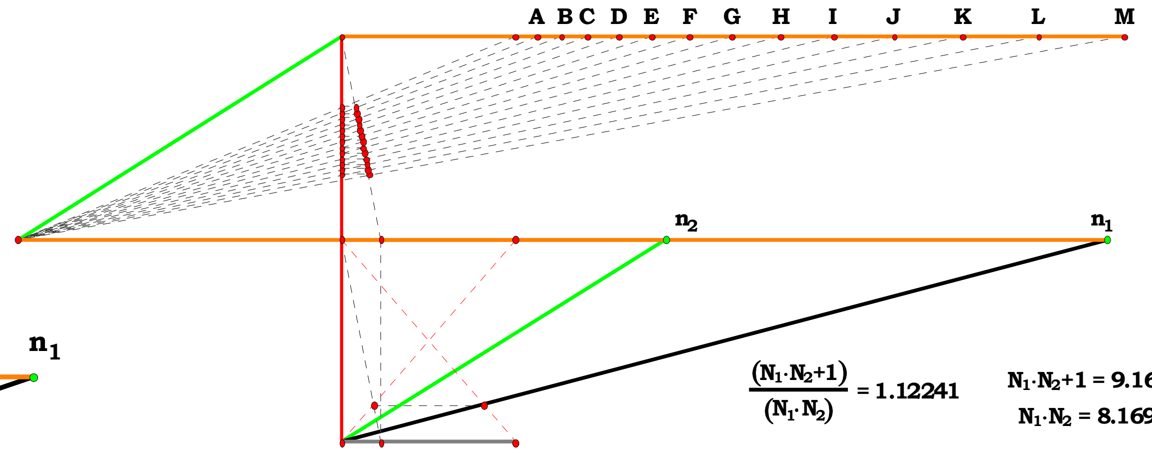
$$R_1 - \frac{N_1 \cdot N_2}{N_1 \cdot N_2 + 1} = 0 \qquad R_1 - R_2^{-1} = 0$$

$A^2\text{-}B = 0.00000$
$(A \cdot B)\text{-}C = 0.00000$
$B^2\text{-}D = 0.00000$
$(B \cdot C)\text{-}E = 0.00000$

$C^2\text{-}F = 0.00000$
$(C \cdot D)\text{-}G = 0.00000$
$D^2\text{-}H = 0.00000$
$(D \cdot E)\text{-}I = 0.00000$

$E^2\text{-}J = 0.00000$
$(E \cdot F)\text{-}K = 0.00000$
$F^2\text{-}L = 0.00000$
$(F \cdot G)\text{-}M = 0.00000$

$$\frac{N_1 \cdot N_2 + 1^{\,1}}{N_1 \cdot N_2} \text{-}A = 0.00000$$
$$\frac{(N_1 \cdot N_2 + 1)^2}{(N_1 \cdot N_2)} \text{-}B = 0.00000$$
$$\frac{(N_1 \cdot N_2 + 1)^3}{(N_1 \cdot N_2)} \text{-}C = 0.00000$$
$$\frac{(N_1 \cdot N_2 + 1)^4}{(N_1 \cdot N_2)} \text{-}D = 0.00000$$
$$\frac{(N_1 \cdot N_2 + 1)^5}{(N_1 \cdot N_2)} \text{-}E = 0.00000$$
$$\frac{(N_1 \cdot N_2 + 1)^6}{(N_1 \cdot N_2)} \text{-}F = 0.00000$$
$$\frac{(N_1 \cdot N_2 + 1)^7}{(N_1 \cdot N_2)} \text{-}G = 0.00000$$
$$\frac{(N_1 \cdot N_2 + 1)^8}{(N_1 \cdot N_2)} \text{-}H = 0.00000$$
$$\frac{(N_1 \cdot N_2 + 1)^9}{(N_1 \cdot N_2)} \text{-}I = 0.00000$$
$$\frac{(N_1 \cdot N_2 + 1)^{10}}{(N_1 \cdot N_2)} \text{-}J = 0.00000$$
$$\frac{(N_1 \cdot N_2 + 1)^{11}}{(N_1 \cdot N_2)} \text{-}K = 0.00000$$
$$\frac{(N_1 \cdot N_2 + 1)^{12}}{(N_1 \cdot N_2)} \text{-}L = 0.00000$$
$$\frac{(N_1 \cdot N_2 + 1)^{13}}{(N_1 \cdot N_2)} \text{-}M = 0.00000$$



$$\frac{(N_1 \cdot N_2 + 1)}{(N_1 \cdot N_2)} = 1.12241$$

$N_1 \cdot N_2 + 1 = 9.16907$
$N_1 \cdot N_2 = 8.16907$

$A^3\text{-}C = 0.00000$
$B^3\text{-}F = 0.00000$
$C^3\text{-}I = 0.00000$
$D^3\text{-}L = 0.00000$

$N_1 = 4.39883$
$N_2 = 1.85710$

$A = 1.12241$
$B = 1.25981$
$C = 1.41403$
$D = 1.58712$
$E = 1.78141$

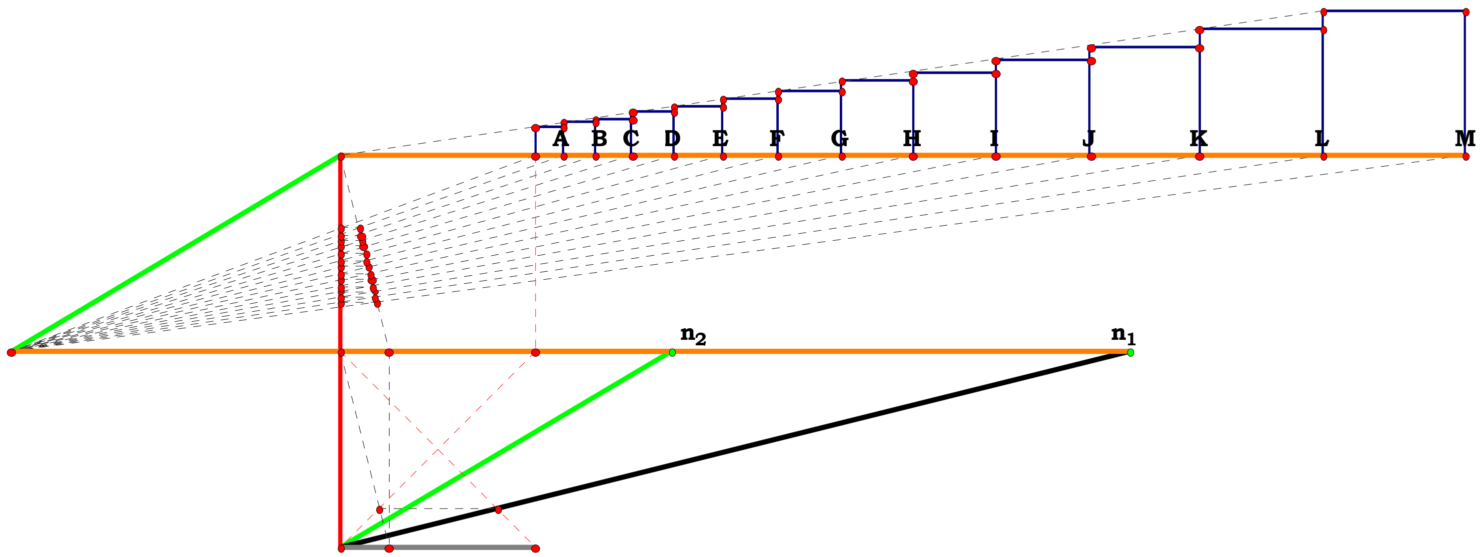
$F = 1.99947$
$G = 2.24424$
$H = 2.51896$
$I = 2.82731$

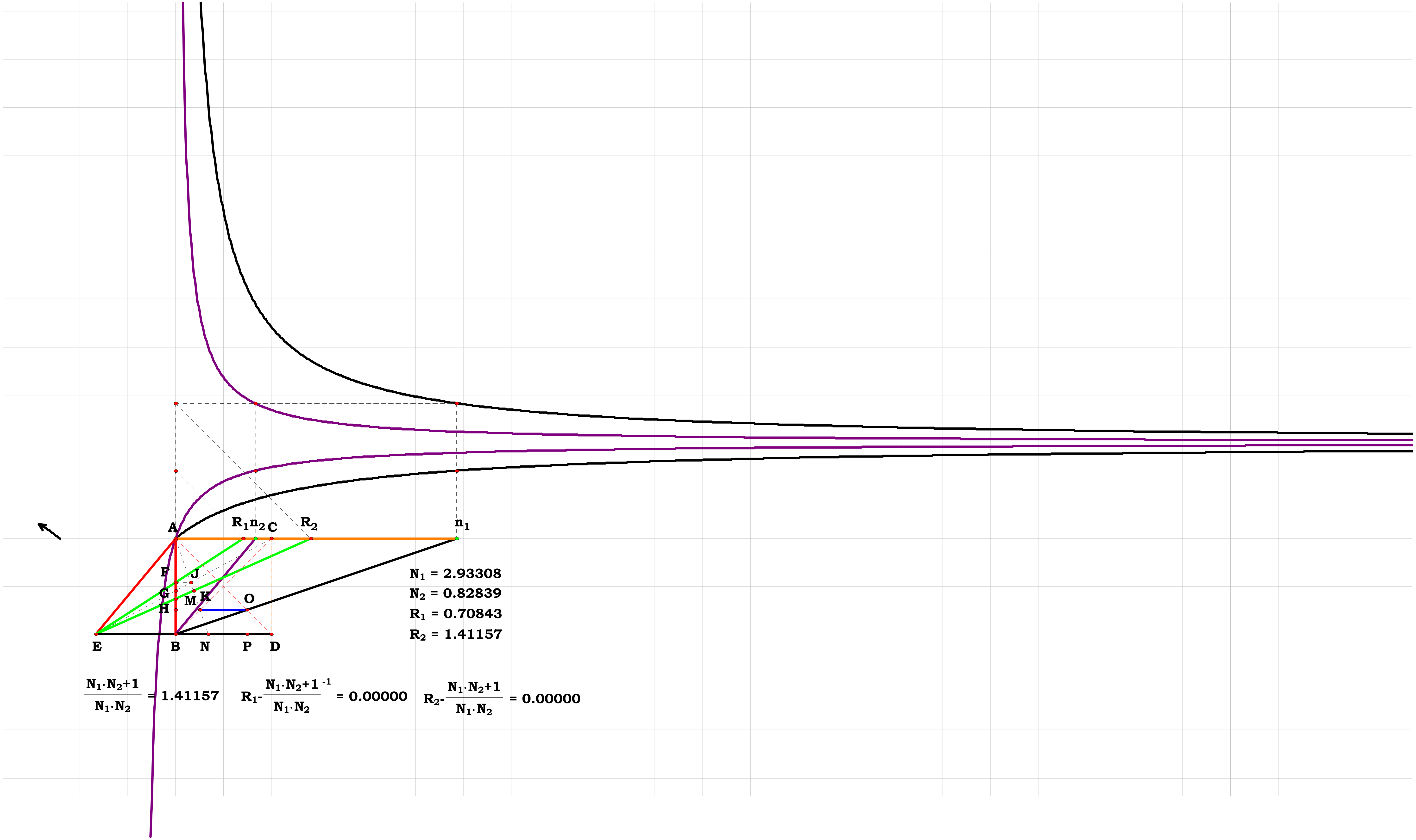
$J = 3.17341$
$K = 3.56188$
$L = 3.99790$
$M = 4.48729$

$A^2 = 1.25981$
$A \cdot B = 1.41403$
$B^2 = 1.58712$
$B \cdot C = 1.78141$

$C^2 = 1.99947$
$C \cdot D = 2.24424$
$D^2 = 2.51896$
$D \cdot E = 2.82731$

$E^2 = 3.17341$
$E \cdot F = 3.56188$
$F^2 = 3.99790$
$F \cdot G = 4.48729$





$N_1 = 2.93308$
$N_2 = 0.82839$
$R_1 = 0.70843$
$R_2 = 1.41157$

$\frac{N_1 \cdot N_2+1}{N_1 \cdot N_2} = 1.41157$ $R_1 - \frac{N_1 \cdot N_2+1}{N_1 \cdot N_2}^{-1} = 0.00000$ $R_2 - \frac{N_1 \cdot N_2+1}{N_1 \cdot N_2} = 0.00000$

072211-1

Just another easily constructable exponential series. However, one can add this plate to the previous one using each point on this as the second variable in that plate.

$A = 1.00000$ $N_1^{0}\text{-}A = 0.00000$

$B = 1.32204$ $N_1^{1}\text{-}B = 0.00000$

$C = 1.74778$ $N_1^{2}\text{-}C = 0.00000$

$D = 2.31062$ $N_1^{3}\text{-}D = 0.00000$

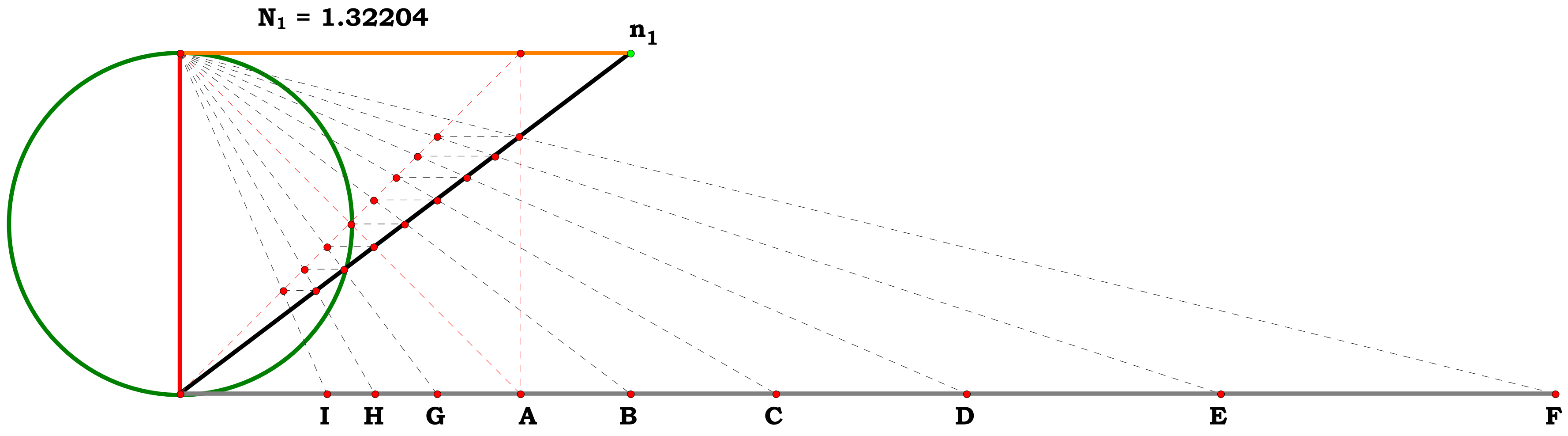
$E = 3.05473$ $N_1^{4}\text{-}E = 0.00000$

$F = 4.03846$ $N_1^{5}\text{-}F = 0.00000$

$G = 0.75641$ $N_1^{-1}\text{-}G = 0.00000$

$H = 0.57216$ $N_1^{-2}\text{-}H = 0.00000$

$I = 0.43278$ $N_1^{-3}\text{-}I = 0.00000$



$AB := 1$

$N_1 := 1.72698$

$KM := \frac{1}{N_1 + 1}$ $BM := \frac{N_1}{N_1 + 1}$

$R_1 := \frac{KM}{BM}$ $R_1 = 0.579046$

$R_1 - \frac{1}{N_1} = 0$ $R_1 - N_1^{-1} = 0$

$BD := AB$ $BD - N_1^{0} = 0$ $GH := \frac{AB}{2}$

$R_2 := \frac{N_1 \cdot GH}{GH}$ $R_2 - N_1 = 0$ $R_2 - N_1^{1} = 0$

$JM := BM$ $R_3 := \frac{N_1 \cdot JM}{KM}$ $R_3 = 2.98246$

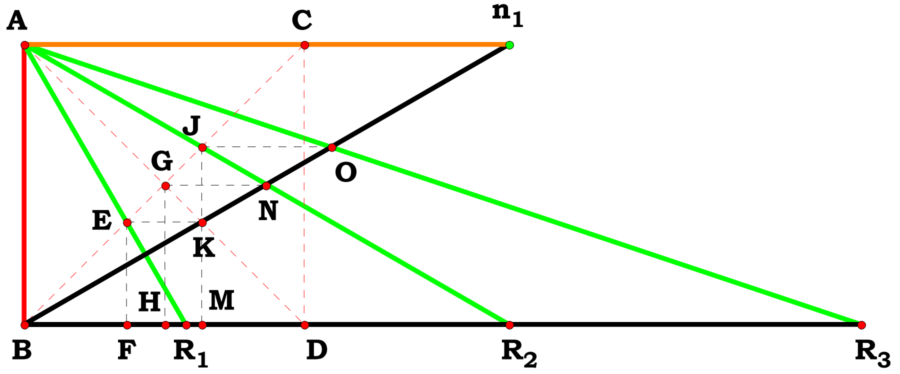
$R_3 - N_1^{2} = 0$

$N_1 = 1.72698$

$R_1 = 0.57905$

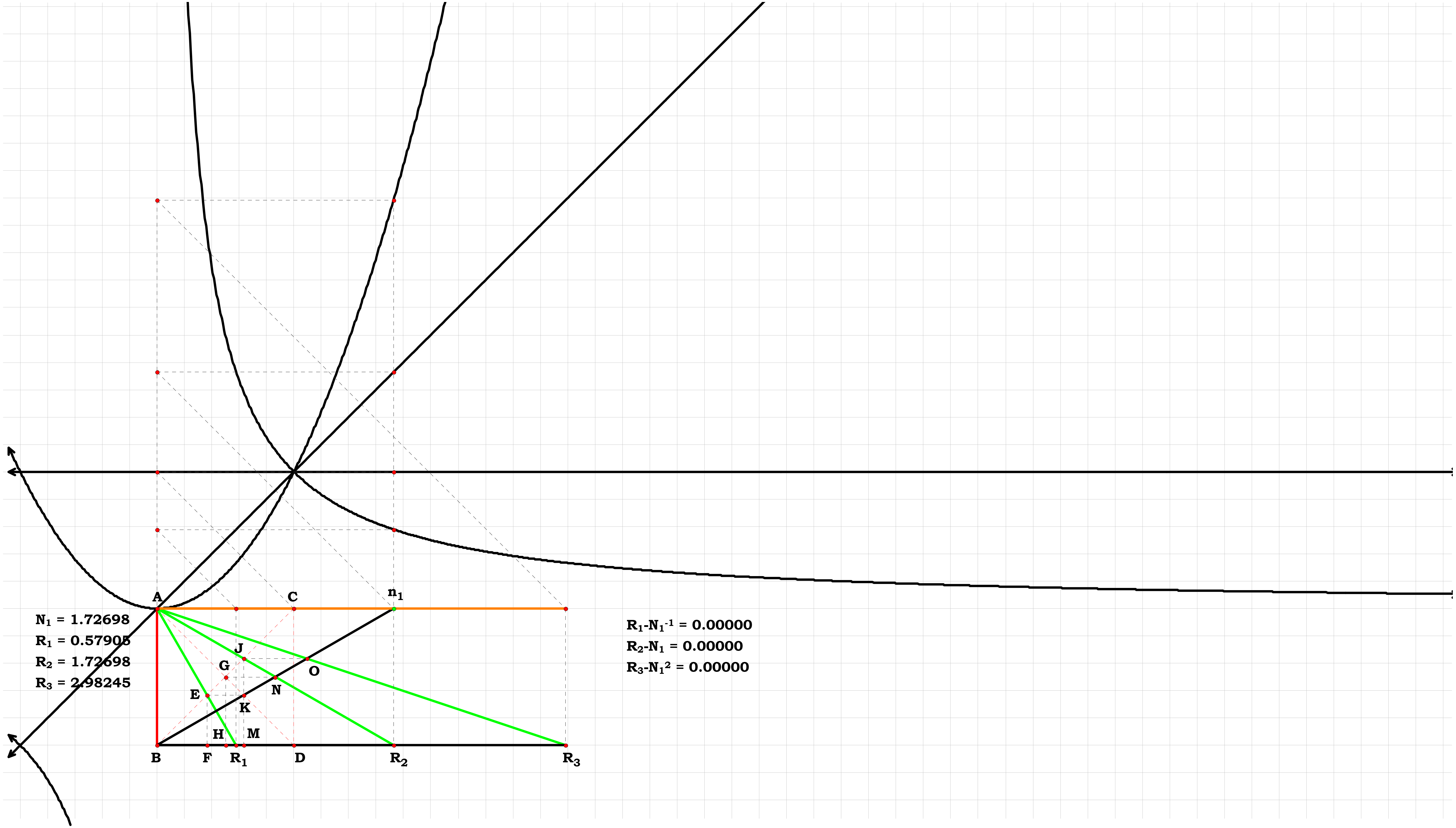
$R_2 = 1.72698$

$R_3 = 2.98245$



One might notice, no matter where N_1 is, AR_1 will always be perpendicular to BN_1, or again, their intersection will always be on the circomference of a circle.

And thus we have four values in a geometric series. One may note, that if I was constructing, which I did for the temple, an arithmetic series, I would use AB, instead of AC to walk the series.


A
C
n_1
$N_1 = 1.72698$
$R_1 = 0.57905$
$R_2 = 1.72698$
$R_3 = 2.98245$
J
G
E
K
N
O
H
M
B
F
R_1
D
R_2
R_3
$R_1 - N_1^{-1} = 0.00000$
$R_2 - N_1 = 0.00000$
$R_3 - N_1^2 = 0.00000$

072211-2

$AB := 1$

$N_1 := 2.13284$

$N_2 := 3.17169$

$AF := \frac{AB}{2}$

$BM := N_1 \cdot AF \quad BT := N_2 \cdot AF$

$R_2 := \frac{BM}{AF} \quad R_3 := \frac{BT}{AF}$

$R_2 = 2.13284 \quad R_3 = 3.17169$

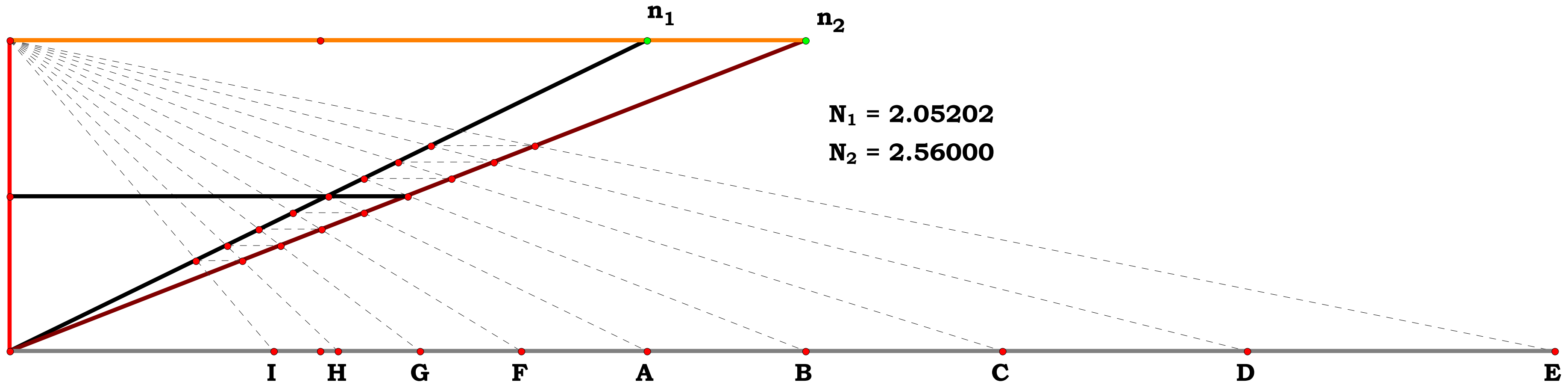
$HJ := \frac{R_2}{N_2 + R_2} \quad BJ := N_1 \cdot HJ$

$R_1 := \frac{BJ}{AB - HJ} \quad NP := \frac{R_3}{R_3 + N_1}$

$BV := N_2 \cdot NP \quad R_4 := \frac{BV}{AB - NP}$

$R_1 = 1.434253 \quad R_4 = 4.716536$

A = 2.05202	$\frac{N_2^0}{N_1^{-1}} = 2.05202$	F = 1.64485	$\frac{N_2^{-1}}{N_1^{-2}} = 1.64485$	$A - \frac{N_2^0}{N_1^{-1}} = 0.00000$	$F - \frac{N_2^{-1}}{N_1^{-2}} = 0.00000$
B = 2.56000	$\frac{N_2^1}{N_1^0} = 2.56000$	G = 1.31846	$\frac{N_2^{-2}}{N_1^{-3}} = 1.31846$	$B - \frac{N_2^1}{N_1^0} = 0.00000$	$G - \frac{N_2^{-2}}{N_1^{-3}} = 0.00000$
C = 3.19372	$\frac{N_2^2}{N_1^1} = 3.19372$	H = 1.05685	$\frac{N_2^{-3}}{N_1^{-4}} = 1.05685$	$C - \frac{N_2^2}{N_1^1} = 0.00000$	$H - \frac{N_2^{-3}}{N_1^{-4}} = 0.00000$
D = 3.98432	$\frac{N_2^3}{N_1^2} = 3.98432$	I = 0.84714	$\frac{N_2^{-4}}{N_1^{-5}} = 0.84714$	$D - \frac{N_2^3}{N_1^2} = 0.00000$	$I - \frac{N_2^{-4}}{N_1^{-5}} = 0.00000$
E = 4.97062	$\frac{N_2^4}{N_1^3} = 4.97062$			$E - \frac{N_2^4}{N_1^3} = 0.00000$	



$N_1 = 2.13284$

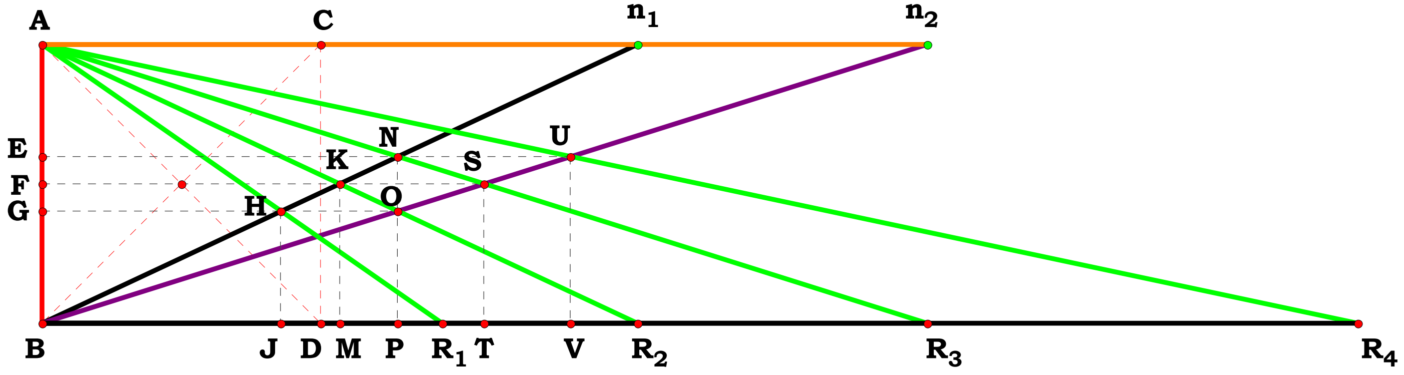
$N_2 = 3.17169$

$R_1 = 1.43425$

$R_2 = 2.13284$

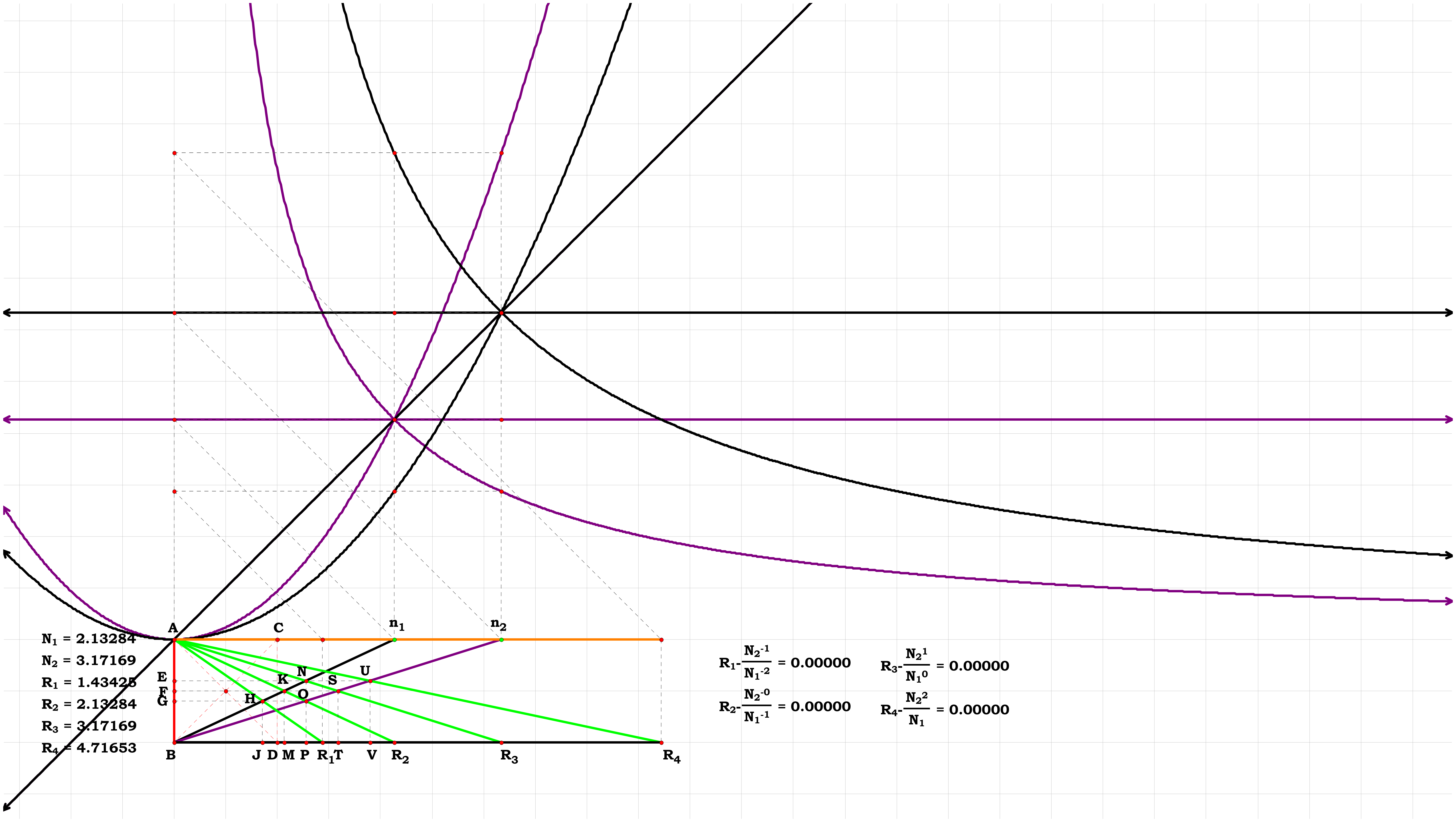
$R_3 = 3.17169$

$R_4 = 4.71653$



$R_1 - \frac{N_1^{\,2}}{N_2} = 0 \quad R_2 - N_1 = 0 \quad R_3 - N_2 = 0 \quad R_4 - \frac{N_2^{\,2}}{N_1} = 0$

$R_1 - \frac{N_2^{\,-1}}{N_1^{\,-2}} = 0 \quad R_2 - \frac{N_2^{\,-0}}{N_1^{\,-1}} = 0 \quad R_3 - \frac{N_2^{\,1}}{N_1^{\,0}} = 0 \quad R_4 - \frac{N_2^{\,2}}{N_1} = 0$



$N_1 = 2.13284$

$N_2 = 3.17169$

$R_1 = 1.43425$

$R_2 = 2.13284$

$R_3 = 3.17169$

$R_4 = 4.71653$

$R_1 - \frac{N_2^{-1}}{N_1^{-2}} = 0.00000$

$R_2 - \frac{N_2^{-0}}{N_1^{-1}} = 0.00000$

$R_3 - \frac{N_2^{1}}{N_1^{0}} = 0.00000$

$R_4 - \frac{N_2^{2}}{N_1} = 0.00000$

080912

$$AB := 1$$

$$N_1 := 3.46347$$

$$N_2 := 2.62874$$

$A = 1.43109$

$B = 2.04801$

$C = 2.93088$

$D = 4.19435$

$E = 6.00248$

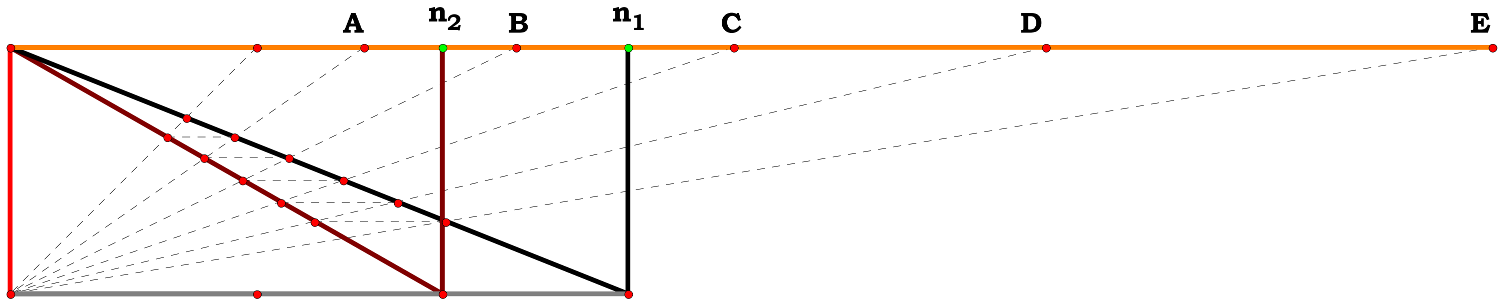
$\frac{N_1}{N_2} - A = 0.00000$

$\frac{N_1}{N_2}^2 - B = 0.00000$

$\frac{N_1}{N_2}^3 - C = 0.00000$

$\frac{N_1}{N_2}^4 - D = 0.00000$

$\frac{N_1}{N_2}^5 - E = 0.00000$



$$AE := \frac{AB}{N_2 + AB} \qquad BN := AE \cdot N_1$$

$$A_1 := \frac{BN}{1 - AE} \qquad AF := \frac{A_1}{A_1 + N_2}$$

$$BT := AF \cdot N_1 \qquad B_1 := \frac{BT}{1 - AF}$$

$$AG := \frac{B_1}{B_1 + N_2} \qquad BX := AG \cdot N_1$$

$$C_1 := \frac{BX}{1 - AG} \qquad AH := \frac{C_1}{C_1 + N_2}$$

$$BZ := AH \cdot N_1 \qquad D_1 := \frac{BZ}{1 - AH}$$

$N_1 = 3.46347$

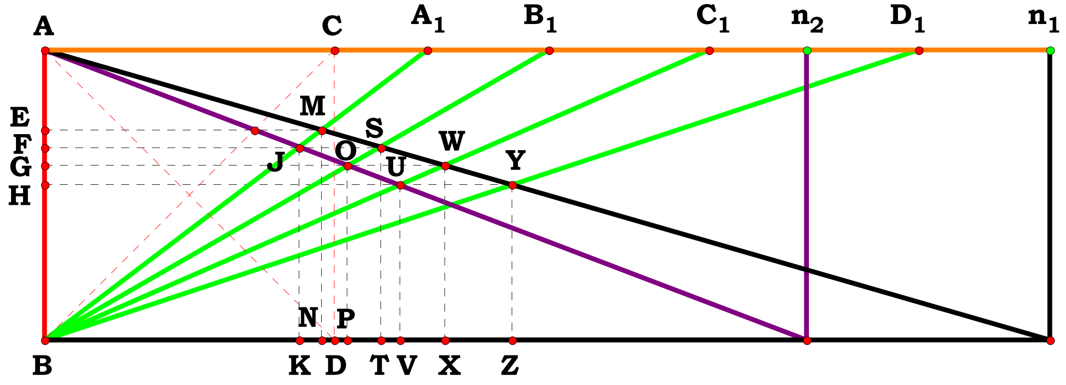
$N_2 = 2.62874$

$A_1 = 1.31754$

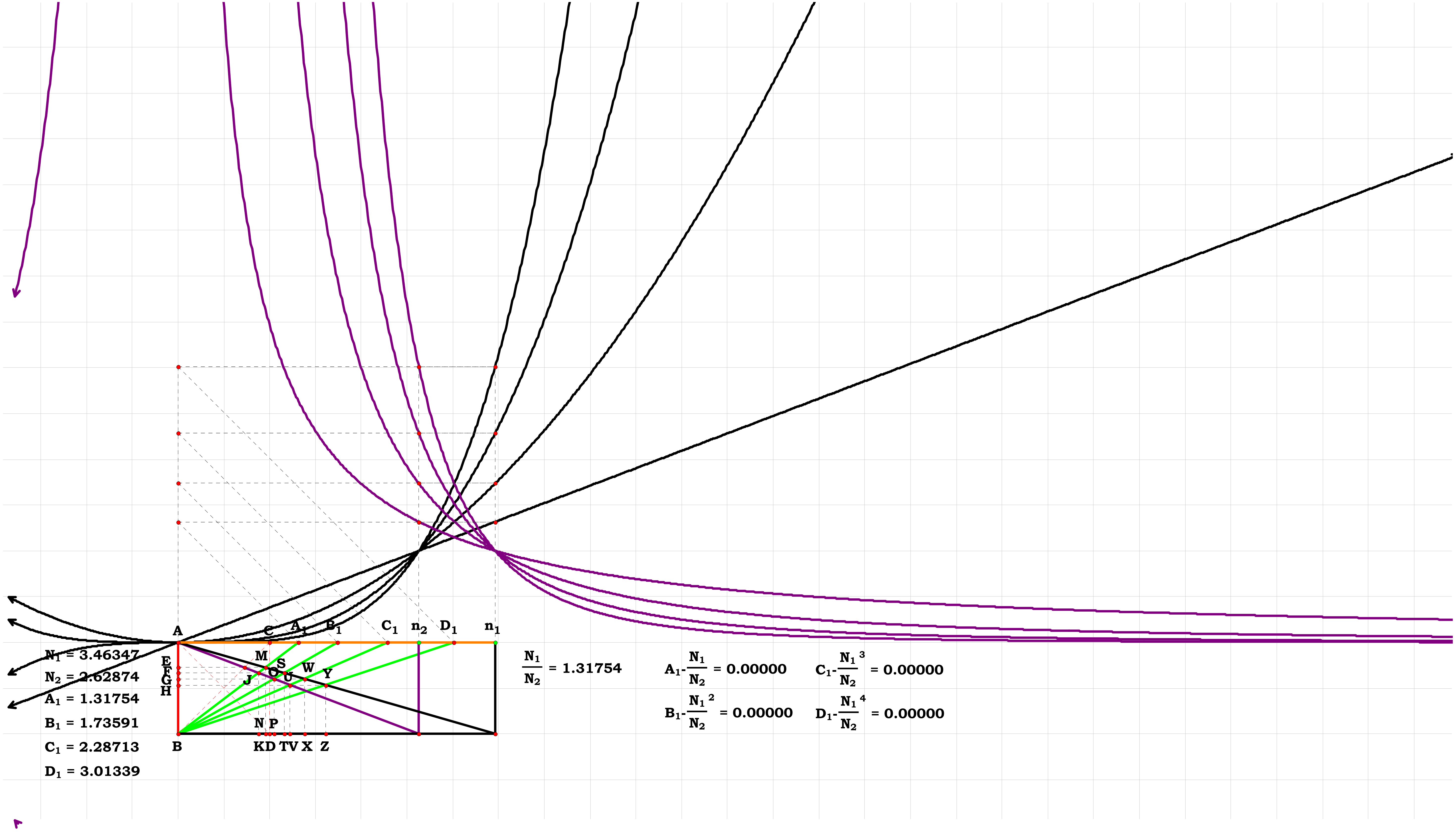
$B_1 = 1.73591$

$C_1 = 2.28713$

$D_1 = 3.01339$



$$A_1 - \frac{N_1}{N_2} = 0 \qquad B_1 - \left(\frac{N_1}{N_2}\right)^2 = 0 \qquad C_1 - \left(\frac{N_1}{N_2}\right)^3 = 0 \qquad D_1 - \left(\frac{N_1}{N_2}\right)^4 = 0$$


A
C
A_1
B_1
C_1
n_2
D_1
n_1
E
F
G
H
M
S
O
U
W
Y
J
N
P
B
K
D
T
V
X
Z
$N_1 = 3.46347$
$N_2 = 2.62874$
$A_1 = 1.31754$
$B_1 = 1.73591$
$C_1 = 2.28713$
$D_1 = 3.01339$
$\frac{N_1}{N_2} = 1.31754$
$A_1-\frac{N_1}{N_2} = 0.00000$
$B_1-\frac{N_1{}^{2}}{N_2} = 0.00000$
$C_1-\frac{N_1{}^{3}}{N_2} = 0.00000$
$D_1-\frac{N_1{}^{4}}{N_2} = 0.00000$

081112

$AB := 1$

$N_1 := 1.24957$

$N_2 := 2.52225$

$N_3 := .58657$

Although one can project the results from the origin, the exponential ladder is made behind it and must be completed anyway.

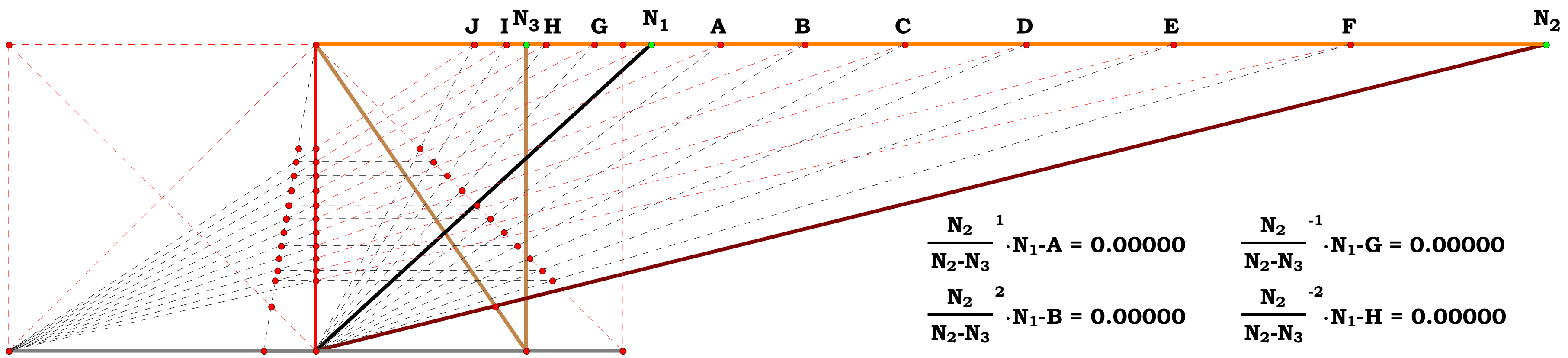
$$BI := 1 - \frac{N_2}{N_2 + N_3} \qquad BP := \frac{BI}{1 - BI} \qquad BF := \frac{1}{N_1 + 1}$$

$$FK := BP\cdot(1 - BF) \qquad R_2 := \frac{1 - FK}{BF} - 1 \qquad BE := \frac{1}{R_2 + 1}$$

$$EK := BP\cdot(1 - BE) \qquad R_1 := \frac{1 - EK}{BE} - 1 \qquad GM := \frac{BP\cdot N_1}{N_1 + 1 - BP}$$

$$BG := 1 - \frac{GM}{BP} \qquad R_3 := \frac{1}{BG} - 1 \qquad HN := \frac{BP\cdot R_3}{R_3 + 1 - BP}$$

$$BH := 1 - \frac{HN}{BP} \qquad R_4 := \frac{1}{BH} - 1$$



$${\frac{N_1^{\frac{1}{4}}\cdot N_2}{N_2\text{-}N_3}}^{4}\text{-}D = 0.00000$$

$$\frac{N_1\cdot N_2^4}{(N_2\text{-}N_3)^4}\text{-}D = 0.00000$$

$$\frac{N_2}{N_2\text{-}N_3} = 1.20647$$

$N_1 = 1.09230$

$N_2 = 4.00439$

$N_3 = 0.68530$

A = 1.31783

B = 1.58992

C = 1.91819

D = 2.31425

E = 2.79207

F = 3.36855

G = 0.90537

H = 0.75043

I = 0.62200

J = 0.51556

$${\frac{N_2}{N_2\text{-}N_3}}^{1}\cdot N_1\text{-}A = 0.00000$$

$${\frac{N_2}{N_2\text{-}N_3}}^{2}\cdot N_1\text{-}B = 0.00000$$

$${\frac{N_2}{N_2\text{-}N_3}}^{3}\cdot N_1\text{-}C = 0.00000$$

$${\frac{N_2}{N_2\text{-}N_3}}^{4}\cdot N_1\text{-}D = 0.00000$$

$${\frac{N_2}{N_2\text{-}N_3}}^{5}\cdot N_1\text{-}E = 0.00000$$

$${\frac{N_2}{N_2\text{-}N_3}}^{6}\cdot N_1\text{-}F = 0.00000$$

$${\frac{N_2}{N_2\text{-}N_3}}^{-1}\cdot N_1\text{-}G = 0.00000$$

$${\frac{N_2}{N_2\text{-}N_3}}^{-2}\cdot N_1\text{-}H = 0.00000$$

$${\frac{N_2}{N_2\text{-}N_3}}^{-3}\cdot N_1\text{-}I = 0.00000$$

$${\frac{N_2}{N_2\text{-}N_3}}^{-4}\cdot N_1\text{-}J = 0.00000$$

$N_1 = 1.24957$

$N_2 = 2.52225$

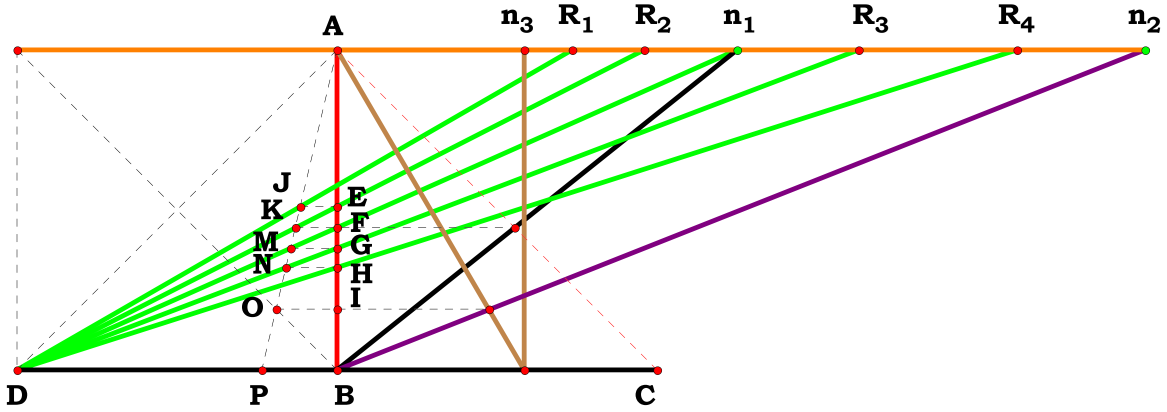
$N_3 = 0.58657$

$R_1 = 0.73596$

$R_2 = 0.95897$

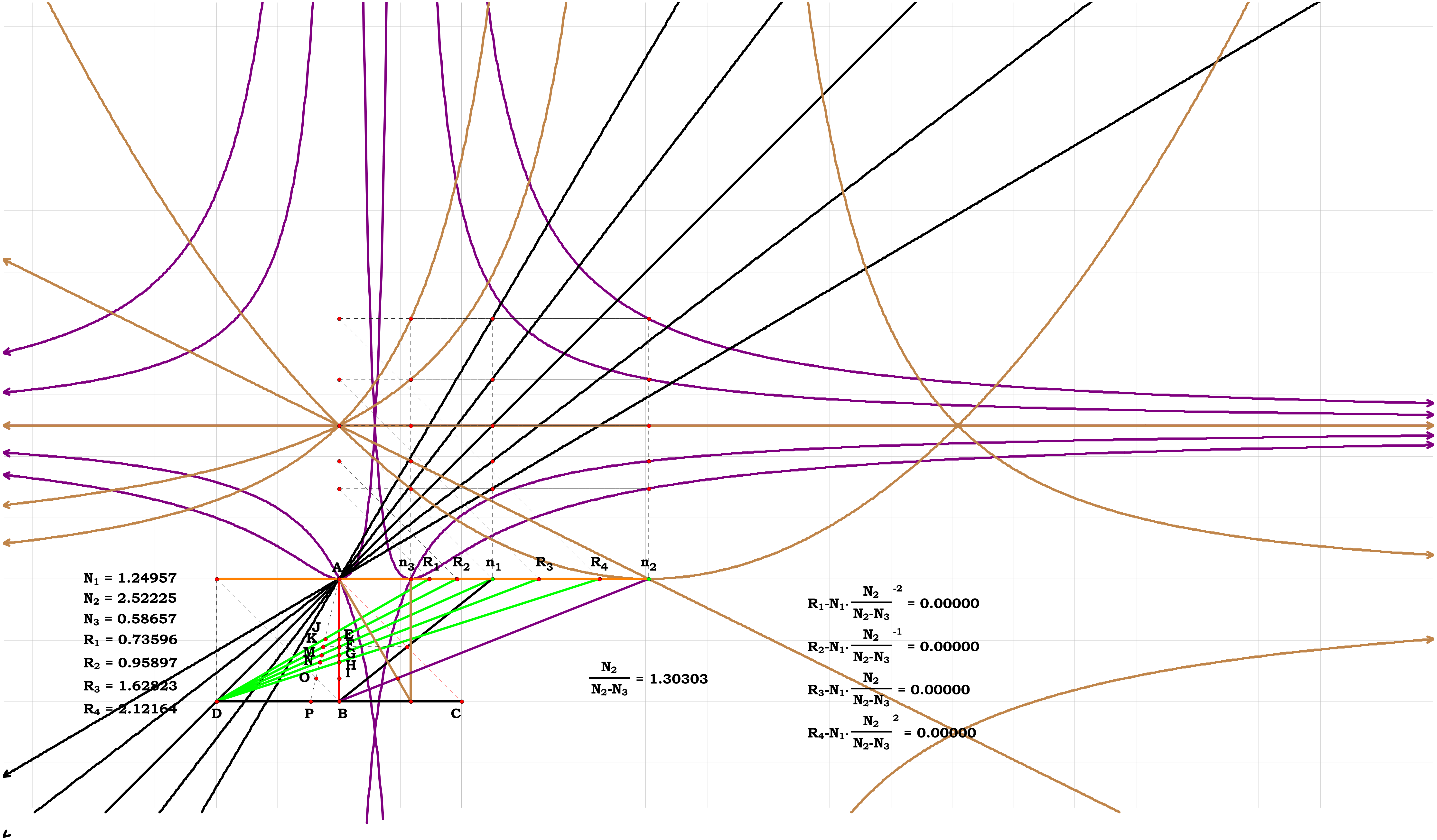
$R_3 = 1.62823$

$R_4 = 2.12164$



$$R_1 - \frac{N_1\cdot(N_2 - N_3)^2}{N_2^{\,2}} = 0 \qquad R_2 - \frac{N_1\cdot(N_2 - N_3)}{N_2} = 0 \qquad R_3 - \frac{N_1\cdot N_2}{N_2 - N_3} = 0 \qquad R_4 - \frac{N_1\cdot N_2^{\,2}}{(N_2 - N_3)^2} = 0$$

$$R_1 - N_1\cdot\left(\frac{N_2}{N_2 - N_3}\right)^{-2} = 0 \qquad R_2 - N_1\cdot\left(\frac{N_2}{N_2 - N_3}\right)^{-1} = 0 \qquad R_3 - N_1\cdot\frac{N_2}{N_2 - N_3} = 0 \qquad R_4 - N_1\cdot\left(\frac{N_2}{N_2 - N_3}\right)^{2} = 0$$



$N_1 = 1.24957$

$N_2 = 2.52225$

$N_3 = 0.58657$

$R_1 = 0.73596$

$R_2 = 0.95897$

$R_3 = 1.62823$

$R_4 = 2.12164$

$$\frac{N_2}{N_2-N_3} = 1.30303$$

$$R_1-N_1\cdot\frac{N_2}{N_2-N_3}^{-2} = 0.00000$$

$$R_2-N_1\cdot\frac{N_2}{N_2-N_3}^{-1} = 0.00000$$

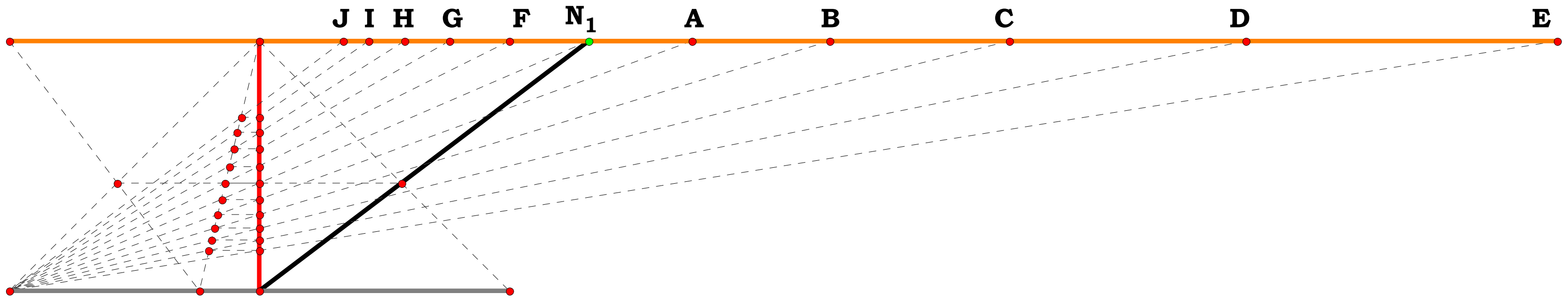
$$R_3-N_1\cdot\frac{N_2}{N_2-N_3} = 0.00000$$

$$R_4-N_1\cdot\frac{N_2}{N_2-N_3}^{2} = 0.00000$$

081212

$AB := 1$

$N_1 := 1.47934$



$N_1 = 1.31554$

$A = 1.73065$
$B = 2.27675$
$C = 2.99516$
$D = 3.94026$
$E = 5.18358$

$F = 1.00000$
$G = 0.76014$
$H = 0.57782$
$I = 0.43922$
$J = 0.33387$

$N_1^2\text{-}A = 0.00000$
$N_1^3\text{-}B = 0.00000$
$N_1^4\text{-}C = 0.00000$
$N_1^5\text{-}D = 0.00000$
$N_1^6\text{-}E = 0.00000$

$N_1^0\text{-}F = 0.00000$
$N_1^{-1}\text{-}G = 0.00000$
$N_1^{-2}\text{-}H = 0.00000$
$N_1^{-3}\text{-}I = 0.00000$
$N_1^{-4}\text{-}J = 0.00000$

$$BG := \frac{1}{N_1 + 1} \qquad GS := 1 - BG \qquad TU := \frac{1 - GS}{1 - BG}$$

$$BU := 1 - TU \qquad GN := BU \cdot (1 - BG) \qquad AC := \frac{1 - GN}{BG} - 1$$

$$AC = 1 \qquad BF := \frac{1}{1 + AC} \qquad FM := BU \cdot (1 - BF)$$

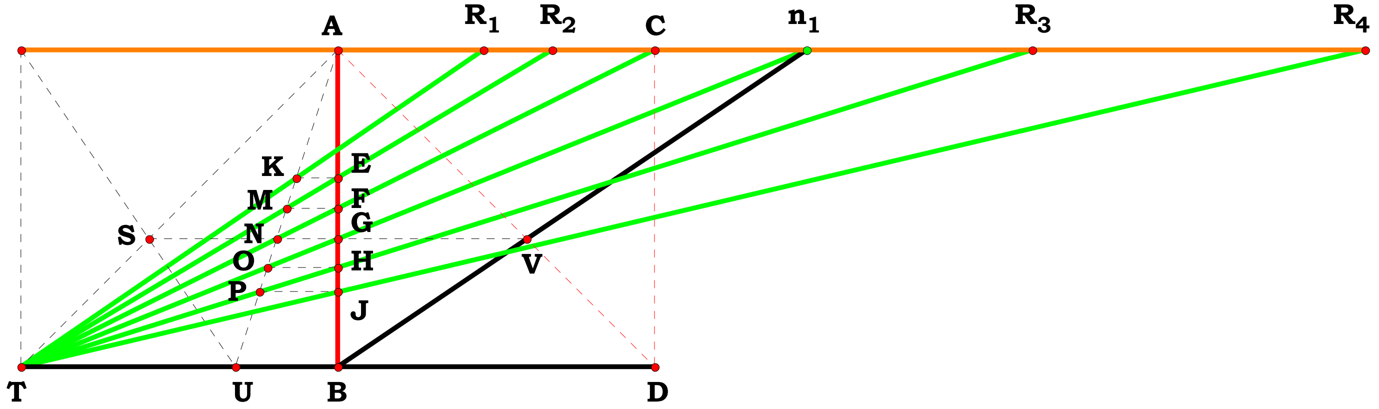
$$R_2 := \frac{1 - FM}{BF} - 1 \qquad BE := \frac{1}{1 + R_2} \qquad EK := BU \cdot (1 - BE)$$

$$R_1 := \frac{1 - EK}{BE} - 1 \qquad N_1 - \left(\frac{1}{BG} - 1\right) = 0$$

$$HO := \frac{N_1 \cdot BU}{N_1 + 1 - BU} \qquad BH := 1 - \frac{HO}{BU} \qquad R_3 := \frac{1}{BH} - 1$$

$$JP := \frac{R_3 \cdot BU}{R_3 + 1 - BU} \qquad BJ := 1 - \frac{JP}{BU} \qquad R_4 := \frac{1}{BJ} - 1$$

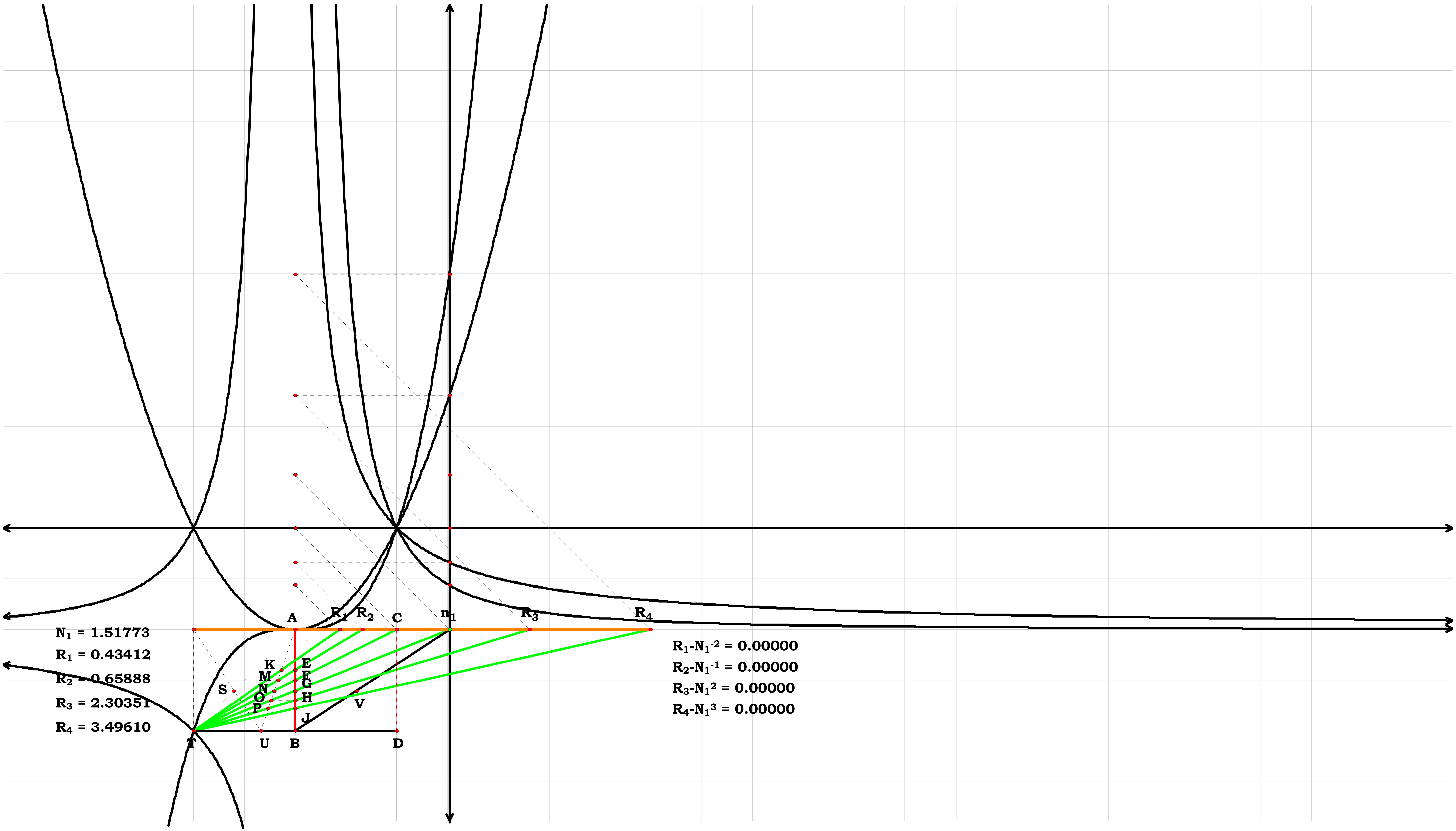
$N_1 = 1.47934$
$R_1 = 0.45694$
$R_2 = 0.67598$
$R_3 = 2.18845$
$R_4 = 3.23746$



$$R_1 = 0.456945 \qquad R_2 = 0.675977 \qquad R_3 = 2.188447 \qquad R_4 = 3.237457$$

$$R_1 - \frac{1}{N_1^{\,2}} = 0 \qquad R_2 - \frac{1}{N_1} = 0 \qquad AB - AC = 0 \qquad N_1 - N_1 = 0 \qquad R_3 - N_1^{\,2} = 0 \qquad R_4 - N_1^{\,3} = 0$$

$$R_1 - N_1^{-2} = 0 \qquad R_2 - N_1^{-1} = 0 \qquad AB - N_1^{\,0} = 0 \qquad N_1 - N_1^{\,1} = 0 \qquad R_3 - N_1^{\,2} = 0 \qquad R_4 - N_1^{\,3} = 0$$



A
R_1
R_2
C
n_1
R_3
R_4
$N_1 = 1.51773$
$R_1 = 0.43412$
$R_2 = 0.65888$
$R_3 = 2.30351$
$R_4 = 3.49610$
K
E
M
F
N
G
O
H
P
J
S
V
T
U
B
D
$R_1 - N_1^{-2} = 0.00000$
$R_2 - N_1^{-1} = 0.00000$
$R_3 - N_1^{2} = 0.00000$
$R_4 - N_1^{3} = 0.00000$

081312

$$AB := 1$$

$$N_1 := 1.97774$$

$$N_2 := 1.45792$$

$$N_3 := 1.89462$$

$$BF := \frac{1}{N_1 + 1} \qquad JL := \frac{1}{N_2 + 1} \qquad KL := \frac{1}{N_3 + 1} \qquad BX := \frac{JL}{1 - JL}$$

$$BW := \frac{KL}{1 - KL} \qquad FP := BX \cdot (1 - BF) \qquad FO := BW \cdot (1 - BF)$$

$$R_3 := \frac{FP}{BF} \qquad R_2 := \frac{FO}{BF} \qquad BE := \frac{BX}{R_2 + BX} \qquad EM := BW \cdot (1 - BE)$$

$$R_1 := \frac{EM}{BE} \qquad BG := \frac{BW}{R_3 + BW} \qquad GR := BX \cdot (1 - BG) \qquad R_4 := \frac{GR}{BG}$$

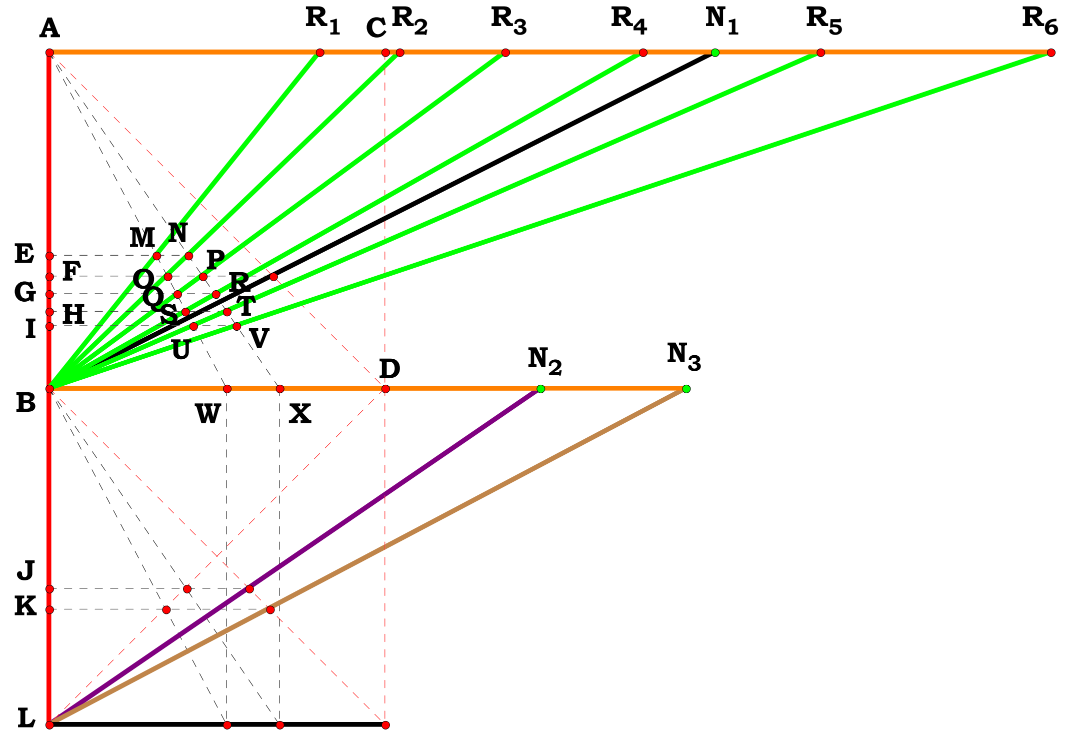
$$BH := \frac{BW}{R_4 + BW} \qquad HT := BX \cdot (1 - BH) \qquad R_5 := \frac{HT}{BH} \qquad BI := \frac{BW}{R_5 + BW}$$

$$IV := BX \cdot (1 - BI) \qquad R_6 := \frac{IV}{BI}$$

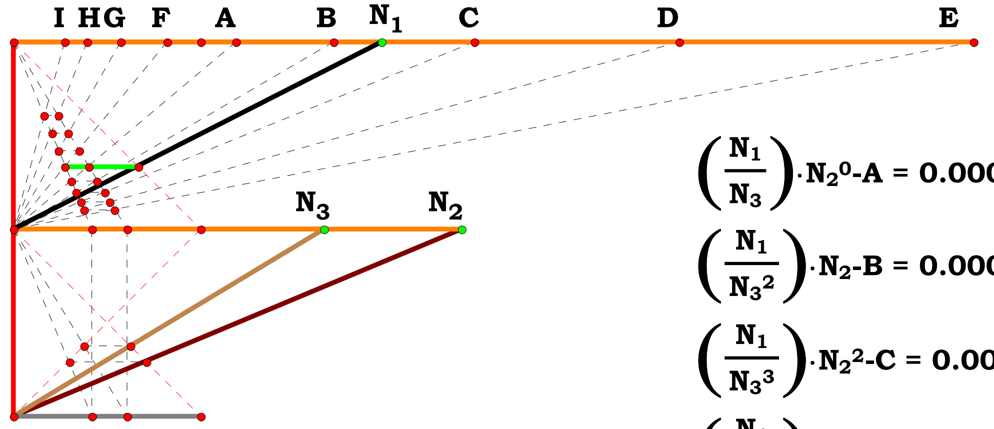
$$R_1 - \frac{N_1 \cdot N_2}{N_3^{\,2}} = 0 \qquad R_2 - \frac{N_1}{N_3} = 0 \qquad R_3 - \frac{N_1}{N_2} = 0$$

$$R_4 - \frac{N_1 \cdot N_3}{N_2^{\,2}} = 0 \qquad R_5 - \frac{N_1 \cdot N_3^{\,2}}{N_2^{\,3}} = 0 \qquad R_6 - \frac{N_1 \cdot N_3^{\,3}}{N_2^{\,4}} = 0$$

$N_1 = 1.97774$
$N_2 = 1.45792$
$N_3 = 1.89462$
$R_1 = 0.80326$
$R_2 = 1.04387$
$R_3 = 1.35655$
$R_4 = 1.76289$
$R_5 = 2.29095$
$R_6 = 2.97718$



I reordered N_2 and N_3



$N_1 = 1.95987$
$N_2 = 2.39124$
$N_3 = 1.65771$

A = 1.18227
B = 1.70541
C = 2.46005
D = 3.54859
E = 5.11881

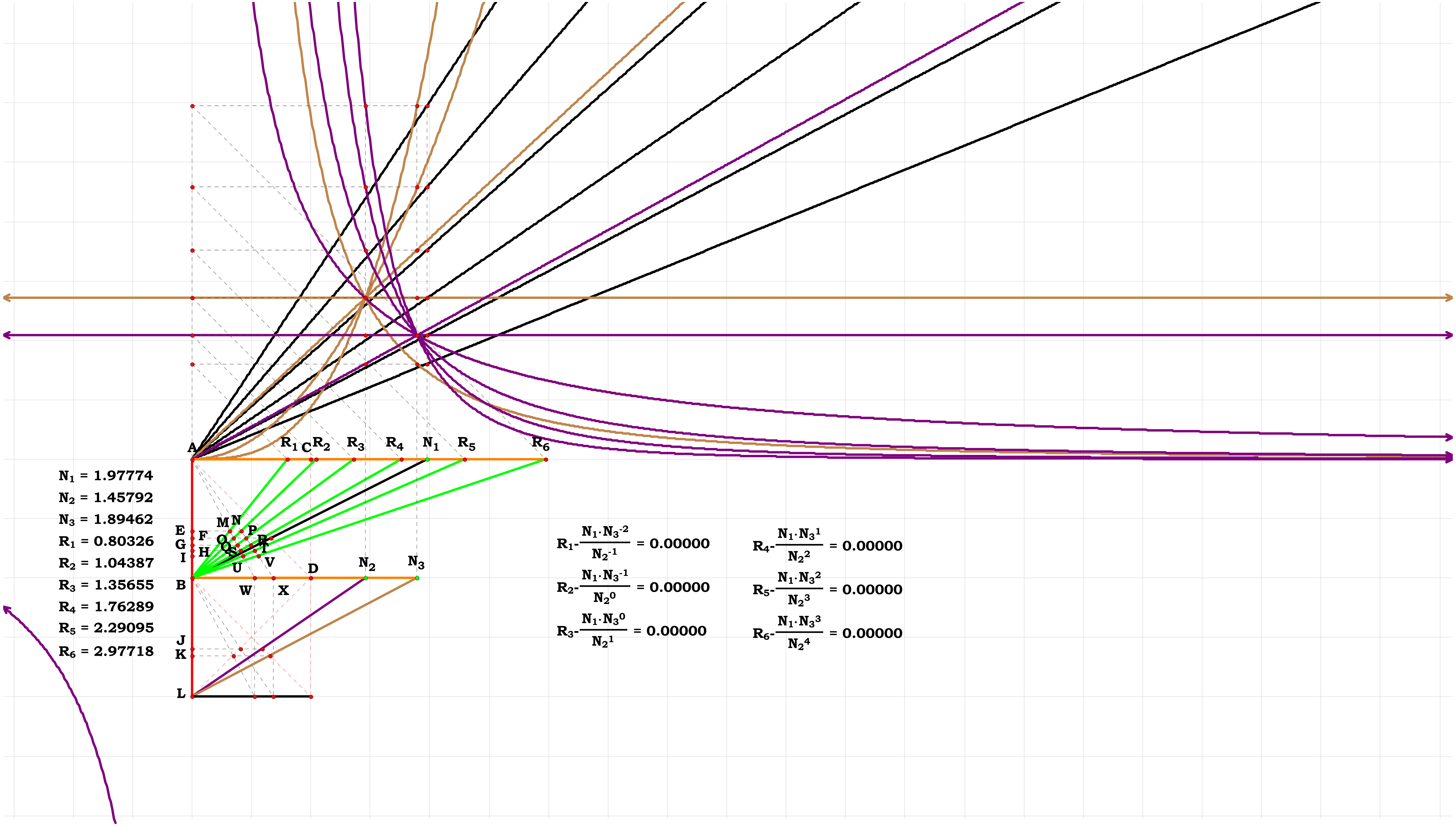
F = 0.81960
G = 0.56819
H = 0.39389
I = 0.27306

$\left(\frac{N_1}{N_3}\right) \cdot N_2{}^{0}\text{-}A = 0.00000$
$\left(\frac{N_1}{N_3{}^{2}}\right) \cdot N_2\text{-}B = 0.00000$
$\left(\frac{N_1}{N_3{}^{3}}\right) \cdot N_2{}^{2}\text{-}C = 0.00000$
$\left(\frac{N_1}{N_3{}^{4}}\right) \cdot N_2{}^{3}\text{-}D = 0.00000$
$\left(\frac{N_1}{N_3{}^{5}}\right) \cdot N_2{}^{4}\text{-}E = 0.00000$

$\left(\frac{N_1}{N_3{}^{0}}\right) \cdot N_2{}^{-1}\text{-}F = 0.00000$
$\left(\frac{N_1}{N_3{}^{-1}}\right) \cdot N_2{}^{-2}\text{-}G = 0.00000$
$\left(\frac{N_1}{N_3{}^{-2}}\right) \cdot N_2{}^{-3}\text{-}H = 0.00000$
$\left(\frac{N_1}{N_3{}^{-3}}\right) \cdot N_2{}^{-4}\text{-}I = 0.00000$

from which one can derive:

$$R_1 - \frac{N_1}{N_2^{\,-1}} \cdot N_3^{\,-2} = 0 \qquad R_2 - \frac{N_1}{N_2^{\,0}} \cdot N_3^{\,-1} = 0 \qquad R_3 - \frac{N_1}{N_2^{\,1}} \cdot N_3^{\,0} = 0 \qquad R_4 - \frac{N_1}{N_2^{\,2}} \cdot N_3^{\,1} = 0 \qquad R_5 - \frac{N_1}{N_2^{\,3}} \cdot N_3^{\,2} = 0 \qquad R_6 - \frac{N_1}{N_2^{\,4}} \cdot N_3^{\,3} = 0$$



$N_1 = 1.97774$

$N_2 = 1.45792$

$N_3 = 1.89462$

$R_1 = 0.80326$

$R_2 = 1.04387$

$R_3 = 1.35655$

$R_4 = 1.76289$

$R_5 = 2.29095$

$R_6 = 2.97718$

$$R_1 - \frac{N_1 \cdot N_3^{-2}}{N_2^{-1}} = 0.00000$$

$$R_2 - \frac{N_1 \cdot N_3^{-1}}{N_2^{0}} = 0.00000$$

$$R_3 - \frac{N_1 \cdot N_3^{0}}{N_2^{1}} = 0.00000$$

$$R_4 - \frac{N_1 \cdot N_3^{1}}{N_2^{2}} = 0.00000$$

$$R_5 - \frac{N_1 \cdot N_3^{2}}{N_2^{3}} = 0.00000$$

$$R_6 - \frac{N_1 \cdot N_3^{3}}{N_2^{4}} = 0.00000$$

081712

$AB := 1$

$N_1 := 1.53478$

$N_2 := -0.54429$

$$BE := \frac{N_2 + 1}{N_1 + N_2 + 1} \qquad EK := \frac{N_1 \cdot N_2}{N_1 + 1 + N_2} \qquad R_1 := \frac{EK}{BE}$$

$$BJ := \frac{N_2 + 1}{N_2 + 1 + R_1} \qquad JP := \frac{R_1 \cdot N_2}{R_1 + 1 + N_2} \qquad R_2 := \frac{JP}{BJ}$$

$$BF := \frac{N_2 + 1}{N_2 + 1 + R_2} \qquad FM := \frac{R_2 \cdot N_2}{R_2 + 1 + N_2} \qquad R_3 := \frac{FM}{BF}$$

$$BH := \frac{N_2 + 1}{N_2 + 1 + R_3} \qquad HO := \frac{R_3 \cdot N_2}{R_3 + 1 + N_2} \qquad R_4 := \frac{HO}{BH}$$

$$BG := \frac{N_2 + 1}{N_2 + 1 + R_4} \qquad GN := \frac{R_4 \cdot N_2}{R_4 + 1 + N_2} \qquad R_5 := \frac{GN}{BG}$$

$R_1 = -1.833107 \qquad R_2 = 2.189423 \qquad R_3 = -2.614999$

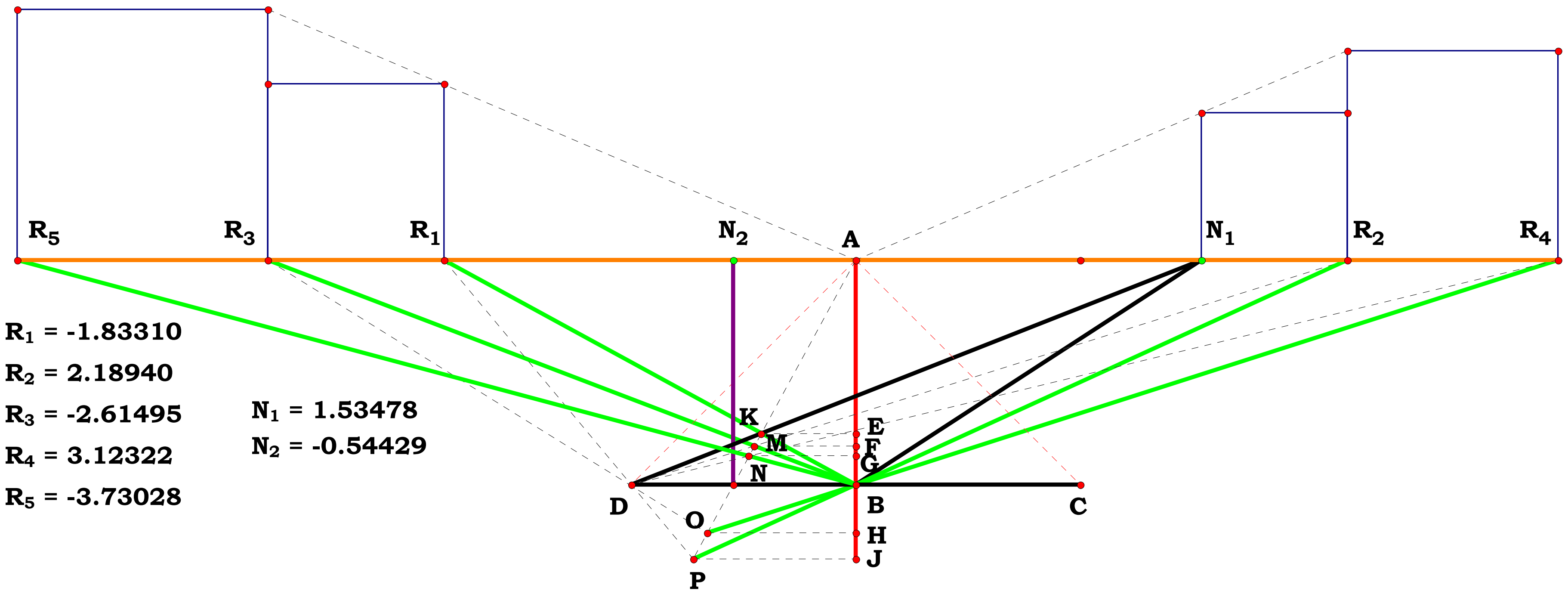
$R_4 = 3.123297 \qquad R_5 = -3.730398$

$$R_1 - \frac{N_1 \cdot N_2}{N_2 + 1} = 0 \qquad R_2 - \frac{N_2 \cdot R_1}{N_2 + 1} = 0 \qquad R_3 - \frac{N_2 \cdot R_2}{N_2 + 1} = 0$$

$$R_4 - \frac{N_2 \cdot R_3}{N_2 + 1} = 0 \qquad R_5 - \frac{N_2 \cdot R_4}{N_2 + 1} = 0$$

$$R_1 - \left(\frac{N_2}{N_2 + 1}\right)^1 \cdot N_1 = 0 \qquad R_2 - \left(\frac{N_2}{N_2 + 1}\right)^2 \cdot N_1 = 0$$

$$R_3 - \left(\frac{N_2}{N_2 + 1}\right)^3 \cdot N_1 = 0 \qquad R_4 - \left(\frac{N_2}{N_2 + 1}\right)^4 \cdot N_1 = 0 \qquad R_5 - \left(\frac{N_2}{N_2 + 1}\right)^5 \cdot N_1 = 0$$



$R_1 = -1.83310$

$R_2 = 2.18940$

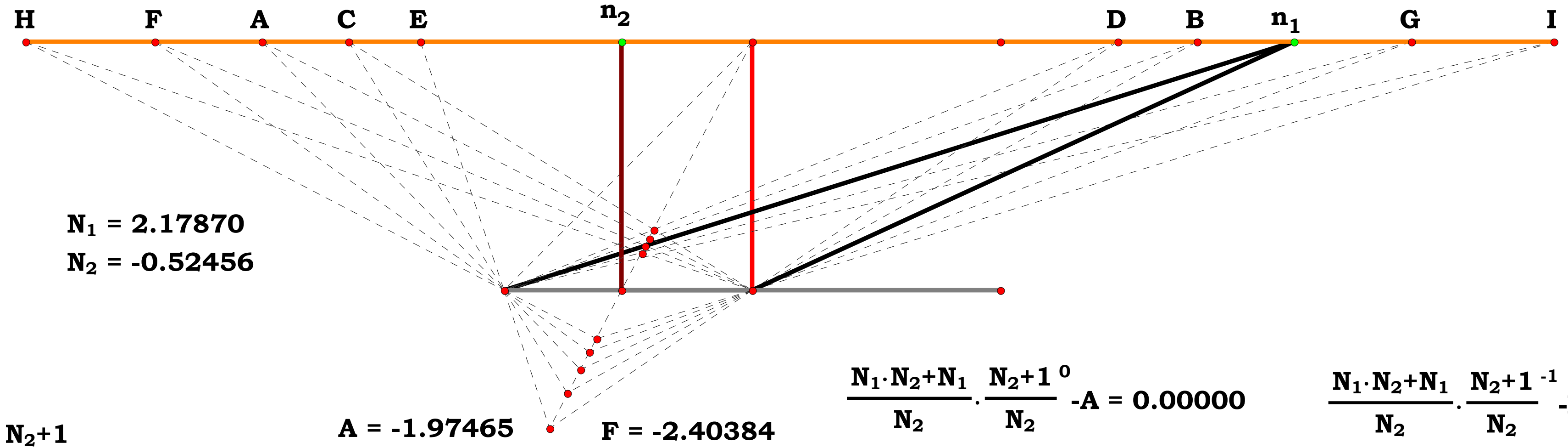
$R_3 = -2.61495$

$R_4 = 3.12322$

$R_5 = -3.73028$

$N_1 = 1.53478$

$N_2 = -0.54429$



$N_1 = 2.17870$

$N_2 = -0.52456$

$$\frac{N_2+1}{N_2} = -0.90634$$

$$\frac{N_1 \cdot N_2+N_1}{N_2} = -1.97465$$

$A = -1.97465$

$B = 1.78970$

$C = -1.62208$

$D = 1.47016$

$E = -1.33247$

$F = -2.40384$

$G = 2.65225$

$H = -2.92632$

$I = 3.22872$

$$\frac{N_1 \cdot N_2+N_1}{N_2} \cdot \frac{N_2+1}{N_2}^{0} - A = 0.00000 \qquad \frac{N_1 \cdot N_2+N_1}{N_2} \cdot \frac{N_2+1}{N_2}^{-1} - N_1 = 0.00000$$

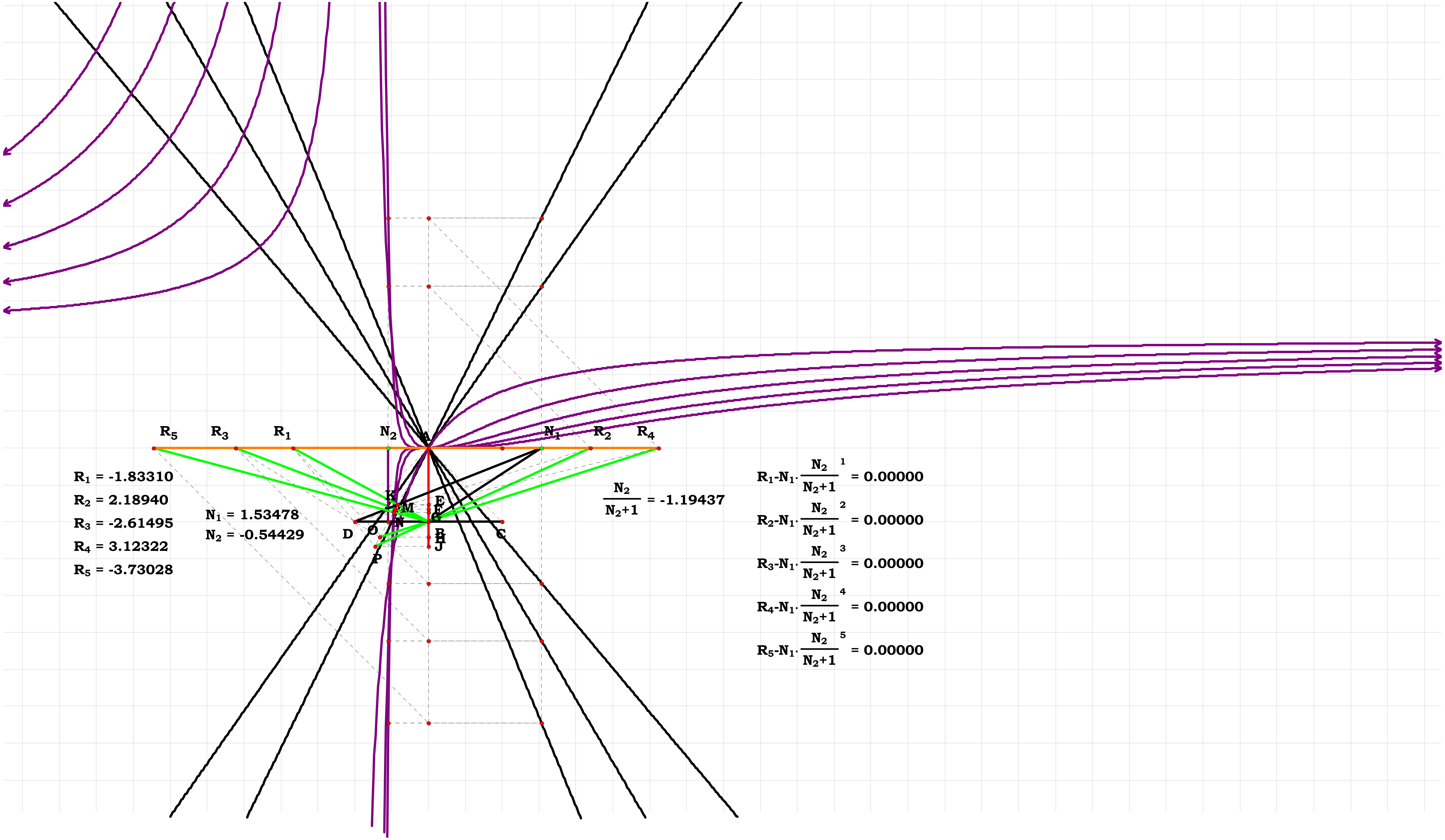
$$\frac{N_1 \cdot N_2+N_1}{N_2} \cdot \frac{N_2+1}{N_2}^{1} - B = 0.00000 \qquad \frac{N_1 \cdot N_2+N_1}{N_2} \cdot \frac{N_2+1}{N_2}^{-2} - F = 0.00000$$

$$\frac{N_1 \cdot N_2+N_1}{N_2} \cdot \frac{N_2+1}{N_2}^{2} - C = 0.00000 \qquad \frac{N_1 \cdot N_2+N_1}{N_2} \cdot \frac{N_2+1}{N_2}^{-3} - G = 0.00000$$

$$\frac{N_1 \cdot N_2+N_1}{N_2} \cdot \frac{N_2+1}{N_2}^{3} - D = 0.00000 \qquad \frac{N_1 \cdot N_2+N_1}{N_2} \cdot \frac{N_2+1}{N_2}^{-4} - H = 0.00000$$

$$\frac{N_1 \cdot N_2+N_1}{N_2} \cdot \frac{N_2+1}{N_2}^{4} - E = 0.00000 \qquad \frac{N_1 \cdot N_2+N_1}{N_2} \cdot \frac{N_2+1}{N_2}^{-5} - I = 0.00000$$

Writing these out does have an adantage!


R_5
R_3
R_1
N_2
A
N_1
R_2
R_4
R_1 = -1.83310
R_2 = 2.18940
R_3 = -2.61495
R_4 = 3.12322
R_5 = -3.73028
N_1 = 1.53478
N_2 = -0.54429
K
M
E
F
G
N
D
O
B
H
J
C
P
$\frac{N_2}{N_2+1}$ = -1.19437
$R_1 - N_1 \cdot \frac{N_2}{N_2+1}^{1}$ = 0.00000
$R_2 - N_1 \cdot \frac{N_2}{N_2+1}^{2}$ = 0.00000
$R_3 - N_1 \cdot \frac{N_2}{N_2+1}^{3}$ = 0.00000
$R_4 - N_1 \cdot \frac{N_2}{N_2+1}^{4}$ = 0.00000
$R_5 - N_1 \cdot \frac{N_2}{N_2+1}^{5}$ = 0.00000

090912-1

$AB := 1$

$N_1 := 2.47834$

$N_2 := 1.69523$

Here, I take the square root output of both variables and use them to project to the unit perpendicular tail to project two parallels upon which I construct the recursive series.

$$BE := \frac{1}{N_2 + 1} \qquad BF := \frac{1}{N_1 + 1} \qquad AE := AB - BE$$

$$AF := AB - BF \qquad EG := \sqrt{AE \cdot BE} \qquad FH := \sqrt{AF \cdot BF}$$

$$DM := \frac{BE}{EG} \qquad DR := \frac{BF}{FH} \qquad R_1 := \frac{FH}{BF} \cdot DM$$

$$R_2 := \frac{R_1}{DR} \cdot DM \qquad R_3 := \frac{R_2}{DR} \cdot DM \qquad R_4 := \frac{R_3}{DR} \cdot DM$$

$$R_1 - \frac{\sqrt{N_1}}{\sqrt{N_2}} = 0 \qquad R_2 - \left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^2 = 0$$

$$R_3 - \left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^3 = 0 \qquad R_4 - \left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^4 = 0$$

$R_1 = 1.209111$

$R_2 = 1.461949$

$R_3 = 1.767659$

$R_4 = 2.137295$

$N_1 := -2.47834$

$N_2 := -1.69523$

Now here is proof positive that current mathematical linguistic comprehension is grossly in error. Some math packages will not give this result, currently there is some dissent in the mathematical community. However, do the figure, there is absolutely no results for so called negative values. If your life depended upon accurate results, would this program satisfy you?

$N_1 = 2.47834$

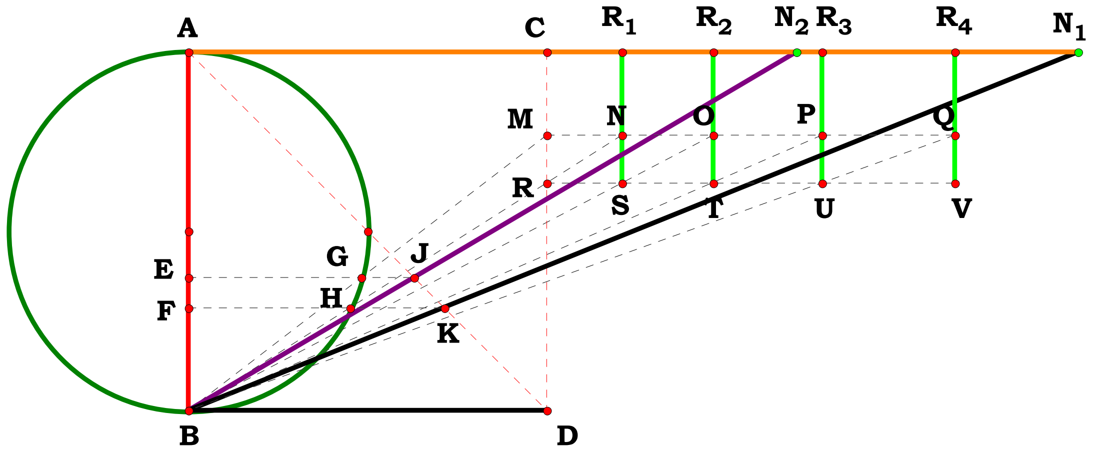
$N_2 = 1.69523$

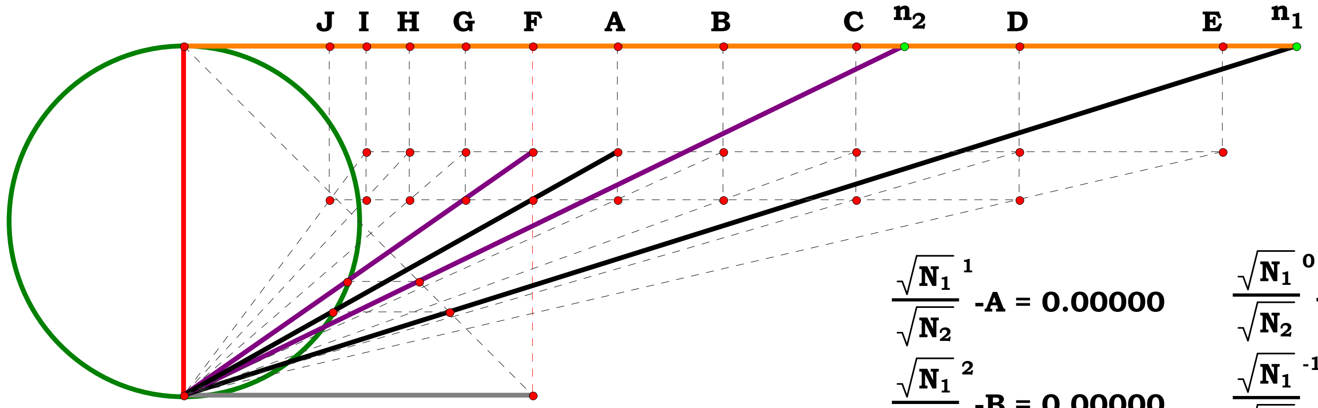
$R_1 = 1.20911$

$R_2 = 1.46194$

$R_3 = 1.76765$

$R_4 = 2.13728$





$$\frac{\sqrt{N_1}}{\sqrt{N_2}} = 1.24338$$

$N_1 = 3.18458$

$N_2 = 2.05988$

A = 1.24338
B = 1.54601
C = 1.92228
D = 2.39013
E = 2.97185

F = 1.00000
G = 0.80426
H = 0.64683
I = 0.52022
J = 0.41839

$$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^1 - A = 0.00000$$

$$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^2 - B = 0.00000$$

$$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^3 - C = 0.00000$$

$$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^4 - D = 0.00000$$

$$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^5 - E = 0.00000$$

$$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^0 - F = 0.00000$$

$$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{-1} - G = 0.00000$$

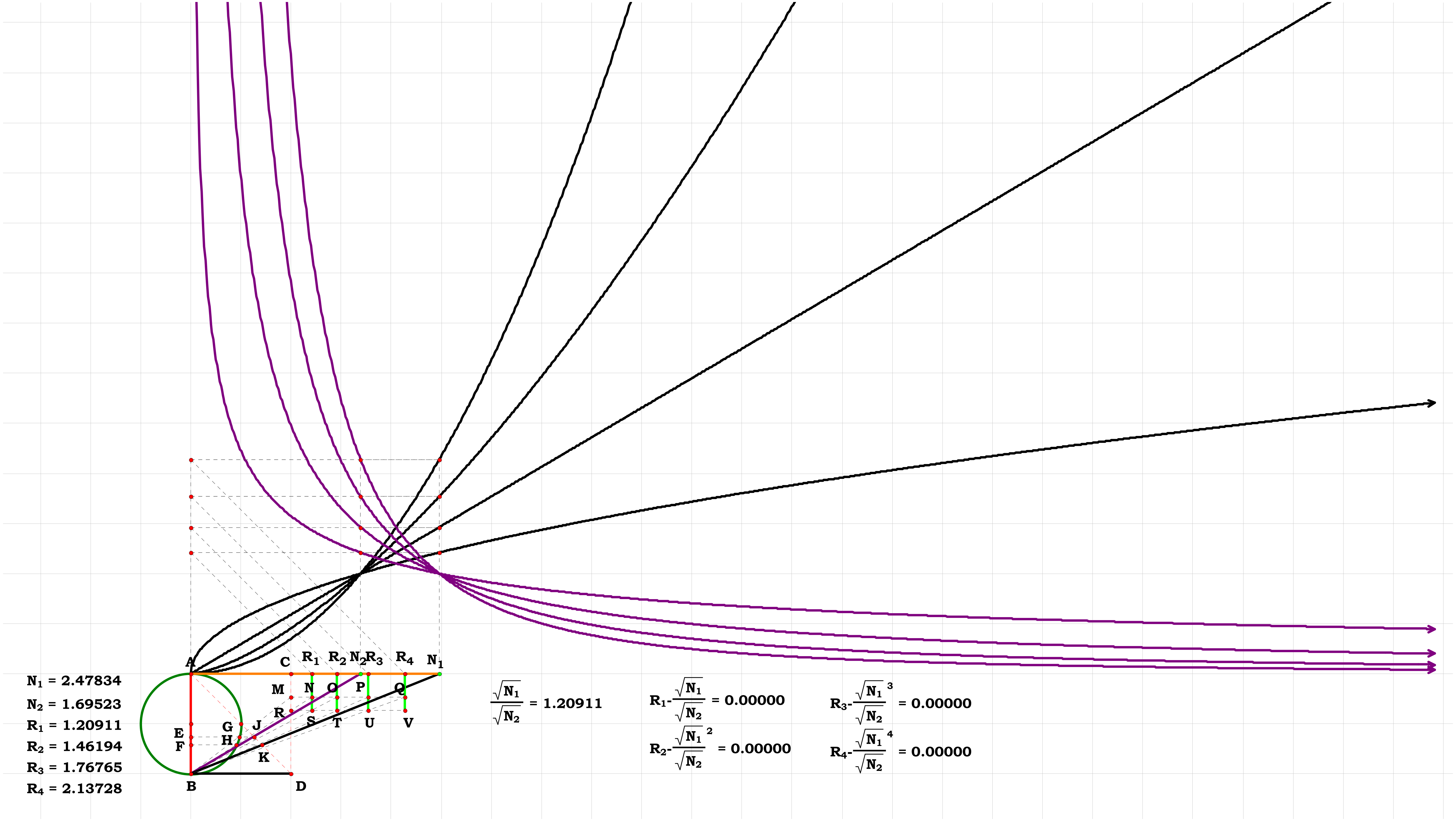
$$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{-2} - H = 0.00000$$

$$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{-3} - I = 0.00000$$

$$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{-4} - J = 0.00000$$

$$\left(N_1 + 1\right) \cdot \sqrt{\frac{N_1}{\left(N_1 + 1\right)^2}} = -1.574274i \qquad \sqrt{N_1} = 1.574274i$$

$$\frac{\left(N_1 + 1\right) \cdot \sqrt{\frac{N_1}{\left(N_1 + 1\right)^2}}}{\left(N_2 + 1\right) \cdot \sqrt{\frac{N_2}{\left(N_2 + 1\right)^2}}} = 1.209111 \qquad \frac{\sqrt{N_1}}{\sqrt{N_2}} = 1.209111$$



$N_1 = 2.47834$
$N_2 = 1.69523$
$R_1 = 1.20911$
$R_2 = 1.46194$
$R_3 = 1.76765$
$R_4 = 2.13728$

$$\frac{\sqrt{N_1}}{\sqrt{N_2}} = 1.20911$$

$$R_1 - \frac{\sqrt{N_1}}{\sqrt{N_2}} = 0.00000$$

$$R_2 - \frac{\sqrt{N_1}}{\sqrt{N_2}}^2 = 0.00000$$

$$R_3 - \frac{\sqrt{N_1}}{\sqrt{N_2}}^3 = 0.00000$$

$$R_4 - \frac{\sqrt{N_1}}{\sqrt{N_2}}^4 = 0.00000$$

090912-2

$$AB := 1$$

$$N_1 := 1.76087$$

$$N_2 := 3.81671$$

$$DK := \frac{1}{N_2 + 1} \qquad FK := \frac{1}{N_1} \qquad R_2 := \frac{1 - DK}{FK}$$

$$EK := \frac{1}{R_2} \qquad R_1 := \frac{1 - DK}{EK} \qquad GK := FK \cdot (1 - DK)$$

$$R_3 := \frac{1}{GK} \qquad HK := GK \cdot (1 - DK) \qquad R_4 := \frac{1}{HK}$$

$$R_1 = 1.105617 \qquad R_2 = 1.395295$$

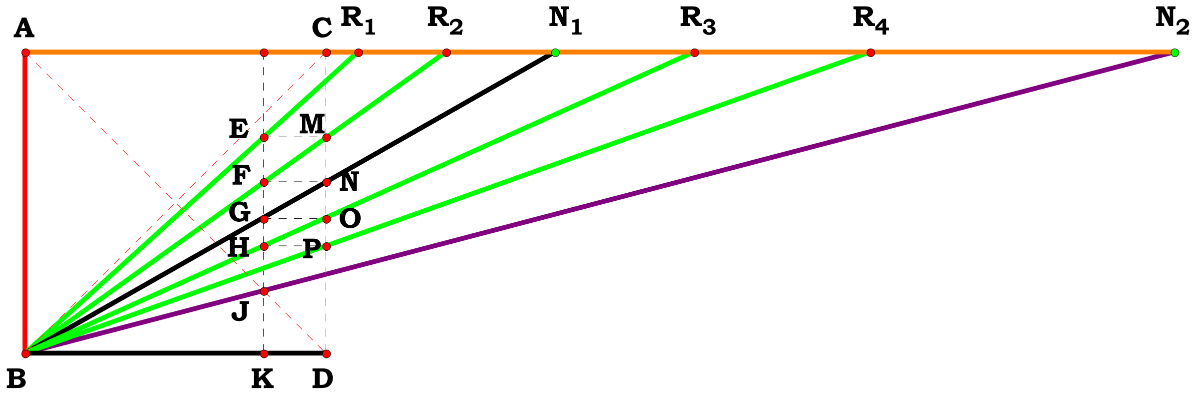
$$R_3 = 2.222228 \qquad R_4 = 2.804465$$

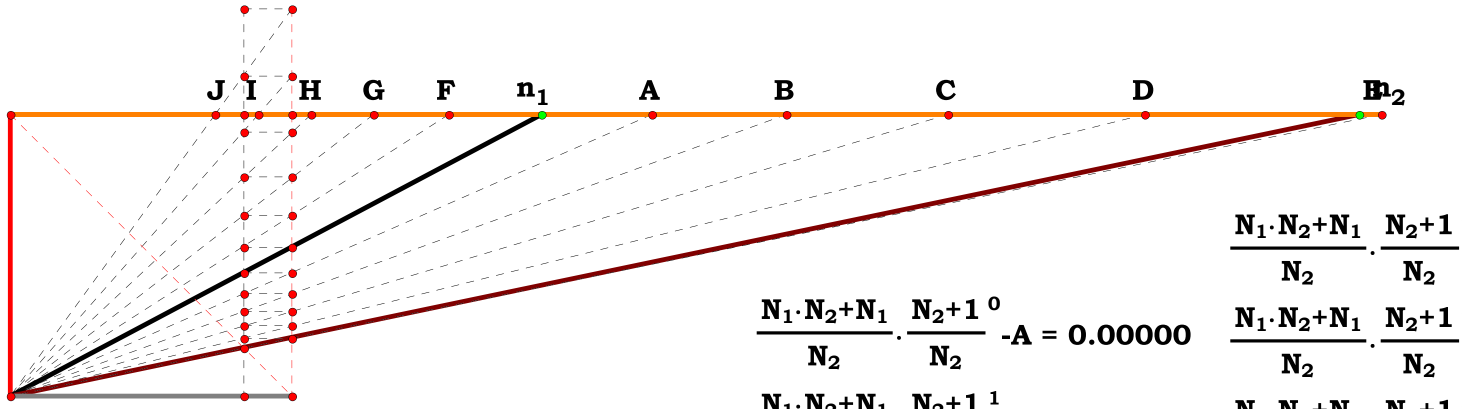
$$R_1 - \left[\frac{(N_2 + 1)}{N_2}\right]^{-2} \cdot N_1 = 0 \qquad R_2 - \left[\frac{(N_2 + 1)}{N_2}\right]^{-1} \cdot N_1 = 0$$

$$N_1 - \left[\frac{(N_2 + 1)}{N_2}\right]^{0} \cdot N_1 = 0 \qquad R_3 - \left[\frac{(N_2 + 1)}{N_2}\right]^{1} \cdot N_1 = 0$$

$$R_4 - \left[\frac{(N_2 + 1)}{N_2}\right]^{2} \cdot N_1 = 0$$

$N_1 = 1.76087$
$N_2 = 3.81671$
$R_1 = 1.10562$
$R_2 = 1.39530$
$R_3 = 2.22223$
$R_4 = 2.80447$





$$\frac{N_1 \cdot N_2 + N_1}{N_2} = 2.27629$$

$$\frac{N_2 + 1}{N_2} = 1.20903$$

$N_1 = 1.88273$
$N_2 = 4.78390$

$A = 2.27629$
$B = 2.75211$
$C = 3.32740$
$D = 4.02294$
$E = 4.86387$

$F = 1.55722$
$G = 1.28799$
$H = 1.06530$
$I = 0.88112$
$J = 0.72878$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \frac{N_2 + 1}{N_2}^{0} - A = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \frac{N_2 + 1}{N_2}^{1} - B = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \frac{N_2 + 1}{N_2}^{2} - C = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \frac{N_2 + 1}{N_2}^{3} - D = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \frac{N_2 + 1}{N_2}^{4} - E = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \frac{N_2 + 1}{N_2}^{-1} - N_1 = 0.00000$$

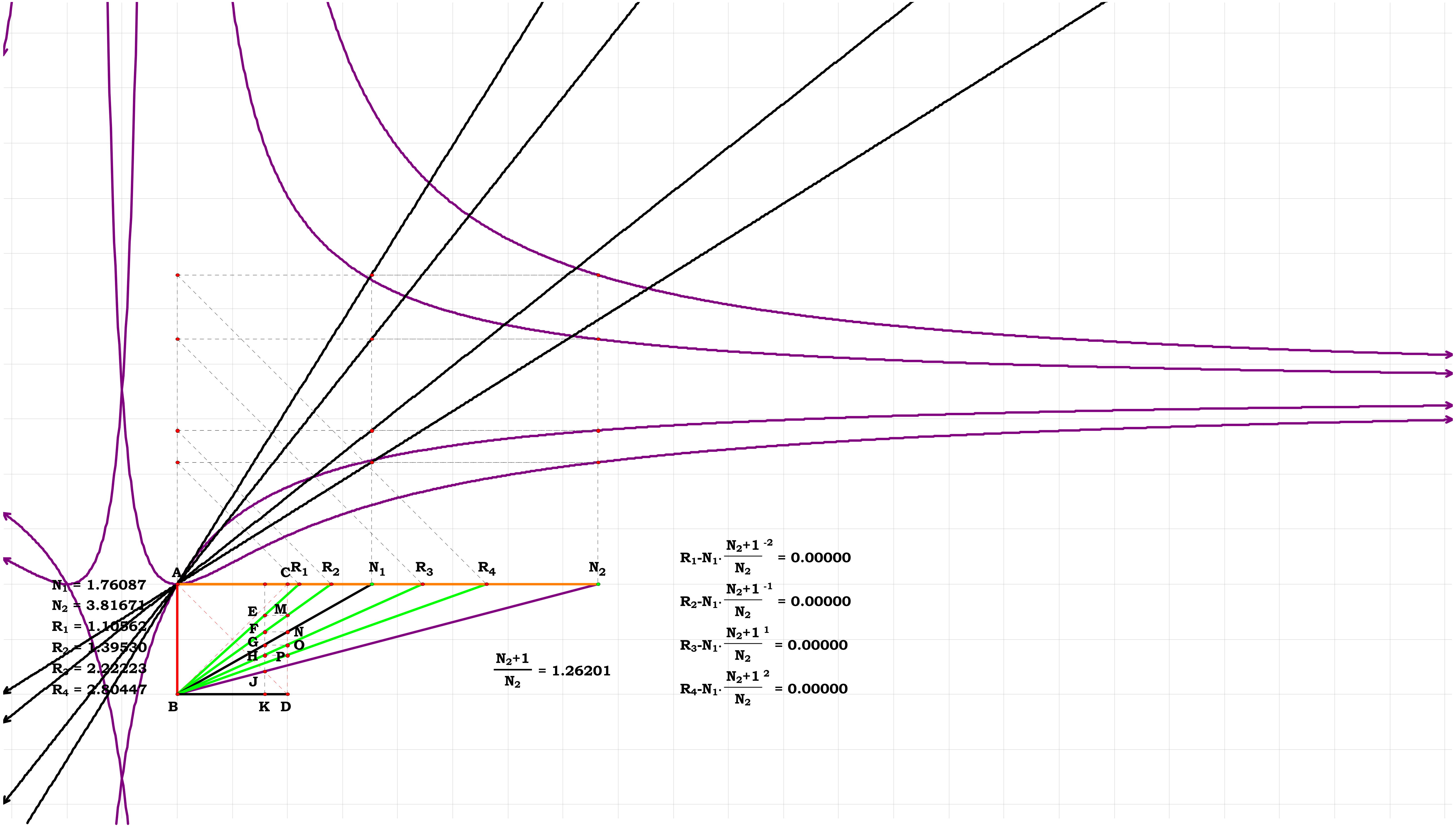
$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \frac{N_2 + 1}{N_2}^{-2} - F = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \frac{N_2 + 1}{N_2}^{-3} - G = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \frac{N_2 + 1}{N_2}^{-4} - H = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \frac{N_2 + 1}{N_2}^{-5} - I = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \frac{N_2 + 1}{N_2}^{-6} - J = 0.00000$$


A
B
C
D
E
F
G
H
J
K
M
N
O
P
R_1
R_2
N_1
R_3
R_4
N_2
N_1 = 1.76087
N_2 = 3.81671
R_1 = 1.10562
R_2 = 1.39530
R_3 = 2.22223
R_4 = 2.80447
$\frac{N_2+1}{N_2}$ = 1.26201
$R_1-N_1\cdot\frac{N_2+1}{N_2}^{-2}$ = 0.00000
$R_2-N_1\cdot\frac{N_2+1}{N_2}^{-1}$ = 0.00000
$R_3-N_1\cdot\frac{N_2+1}{N_2}^{1}$ = 0.00000
$R_4-N_1\cdot\frac{N_2+1}{N_2}^{2}$ = 0.00000

090912-3

This plate demonstrates two series. One may also infer that for every plate I project from the bottom of the origin, I can make a different plate of it by projecting from the top origin so that each plate like this one could have a minimum of four demonstrations. One can, in fact, project anywhere on the origin wall by adding another variable to the equation as I have done on other plates.

If one works with Geometer's Sketchpad, they will quickly notice that unlike any other drawing prgram one may have, it does not have a zoom feature so one can work in small places. One either has to manually enlarge the figure, or one can print the figure to a PDF file and use the zoom feature of the reader. These print as vector graphics so one can zoom in as far as they like. My early drawings, a long time ago, were done in TommyCad, which one could zoom in as far as they like, however, it did not have motion in mind when that program was written, nor did it have the idea of writing up figures using equations.

One may also notice that where one starts a sequence from determines the resulting equation also. For example, these plates start the series from the unit perpendicular operational tail. I could have started the sequence from the operational tails of either variable as well, which would change the equation. One can even add a variable, as I have done in some plates, just to independently set the point of origine of the sequence itself.

$$\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)} = 1.10854$$

A = 1.10854
B = 1.22886
C = 1.36225
D = 1.51010
E = 1.67401
F = 0.90209
G = 0.81376
H = 0.73408
I = 0.66221

$$\frac{N_2\cdot(N_1+1)^{1}}{N_1\cdot(N_2+1)} - A = 0.00000$$

$$\frac{N_2\cdot(N_1+1)^{2}}{N_1\cdot(N_2+1)} - B = 0.00000$$

$$\frac{N_2\cdot(N_1+1)^{3}}{N_1\cdot(N_2+1)} - C = 0.00000$$

$$\frac{N_2\cdot(N_1+1)^{4}}{N_1\cdot(N_2+1)} - D = 0.00000$$

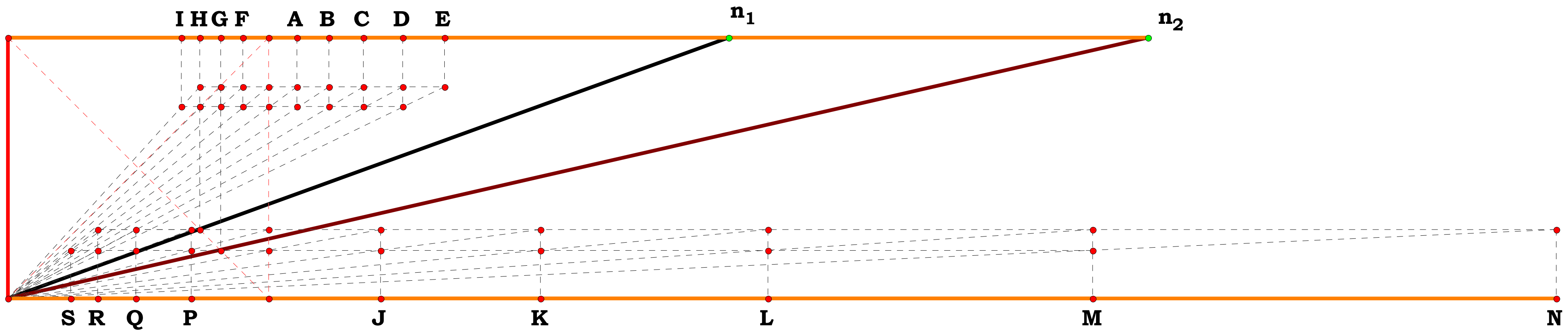
$$\frac{N_2\cdot(N_1+1)^{5}}{N_1\cdot(N_2+1)} - E = 0.00000$$

$$\frac{N_2\cdot(N_1+1)^{-1}}{N_1\cdot(N_2+1)} - F = 0.00000$$

$$\frac{N_2\cdot(N_1+1)^{-2}}{N_1\cdot(N_2+1)} - G = 0.00000$$

$$\frac{N_2\cdot(N_1+1)^{-3}}{N_1\cdot(N_2+1)} - H = 0.00000$$

$$\frac{N_2\cdot(N_1+1)^{-4}}{N_1\cdot(N_2+1)} - I = 0.00000$$



$$\frac{N_2+1}{N_1+1} = 1.42764$$

N_1 = 2.75971
N_2 = 4.36750

J = 1.42764
K = 2.03815
L = 2.90973
M = 4.15404
N = 5.93046

P = 0.70046
Q = 0.49064
R = 0.34367
S = 0.24073

$${\frac{N_2+1}{N_1+1}}^{1} - J = 0.00000$$

$${\frac{N_2+1}{N_1+1}}^{2} - K = 0.00000$$

$${\frac{N_2+1}{N_1+1}}^{3} - L = 0.00000$$

$${\frac{N_2+1}{N_1+1}}^{4} - M = 0.00000$$

$${\frac{N_2+1}{N_1+1}}^{5} - N = 0.00000$$

$${\frac{N_2+1}{N_1+1}}^{-1} - P = 0.00000$$

$${\frac{N_2+1}{N_1+1}}^{-2} - Q = 0.00000$$

$${\frac{N_2+1}{N_1+1}}^{-3} - R = 0.00000$$

$${\frac{N_2+1}{N_1+1}}^{-4} - S = 0.00000$$

090912-3a

$AB := 1$

$N_1 := 1.46762$

$N_2 := 2.78261$

$N_1 = 1.46762$

$N_2 = 2.78261$

$R_1 = 0.52847$

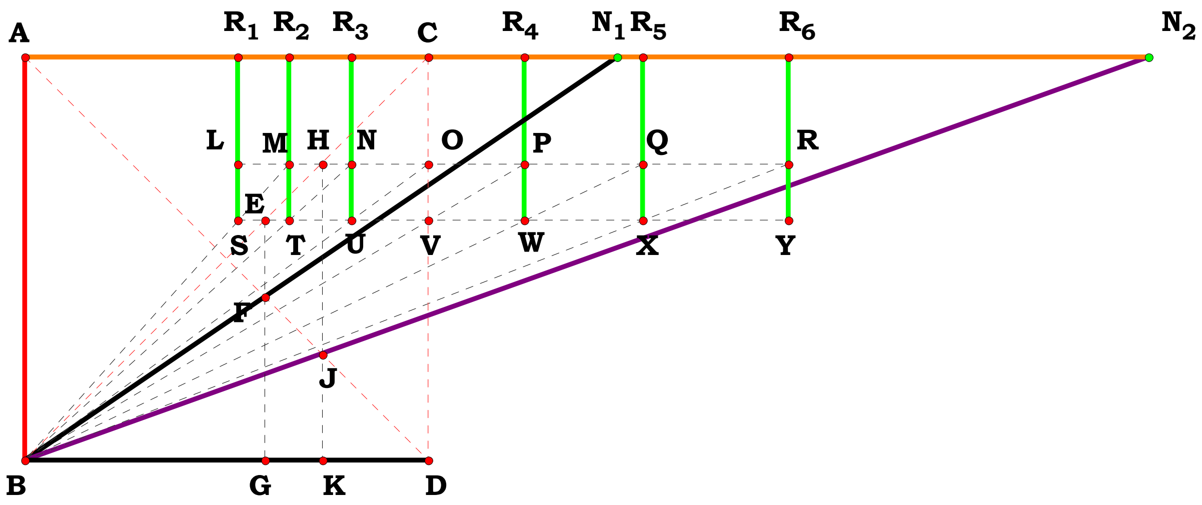
$R_2 = 0.65365$

$R_3 = 0.80849$

$R_4 = 1.23688$

$R_5 = 1.52986$

$R_6 = 1.89225$



$$DG := \frac{1}{N_1 + 1} \qquad DK := \frac{1}{N_2 + 1}$$

$$DO := 1 - DK \qquad DV := 1 - DG$$

$$R_4 := \frac{1}{DV} \cdot DO \qquad R_5 := \frac{R_4}{DV} \cdot DO \qquad R_6 := \frac{R_5}{DV} \cdot DO$$

$$R_3 := \frac{1}{DO} \cdot DV \qquad R_2 := \frac{R_3}{DO} \cdot DV \qquad R_1 := \frac{R_2}{DO} \cdot DV$$

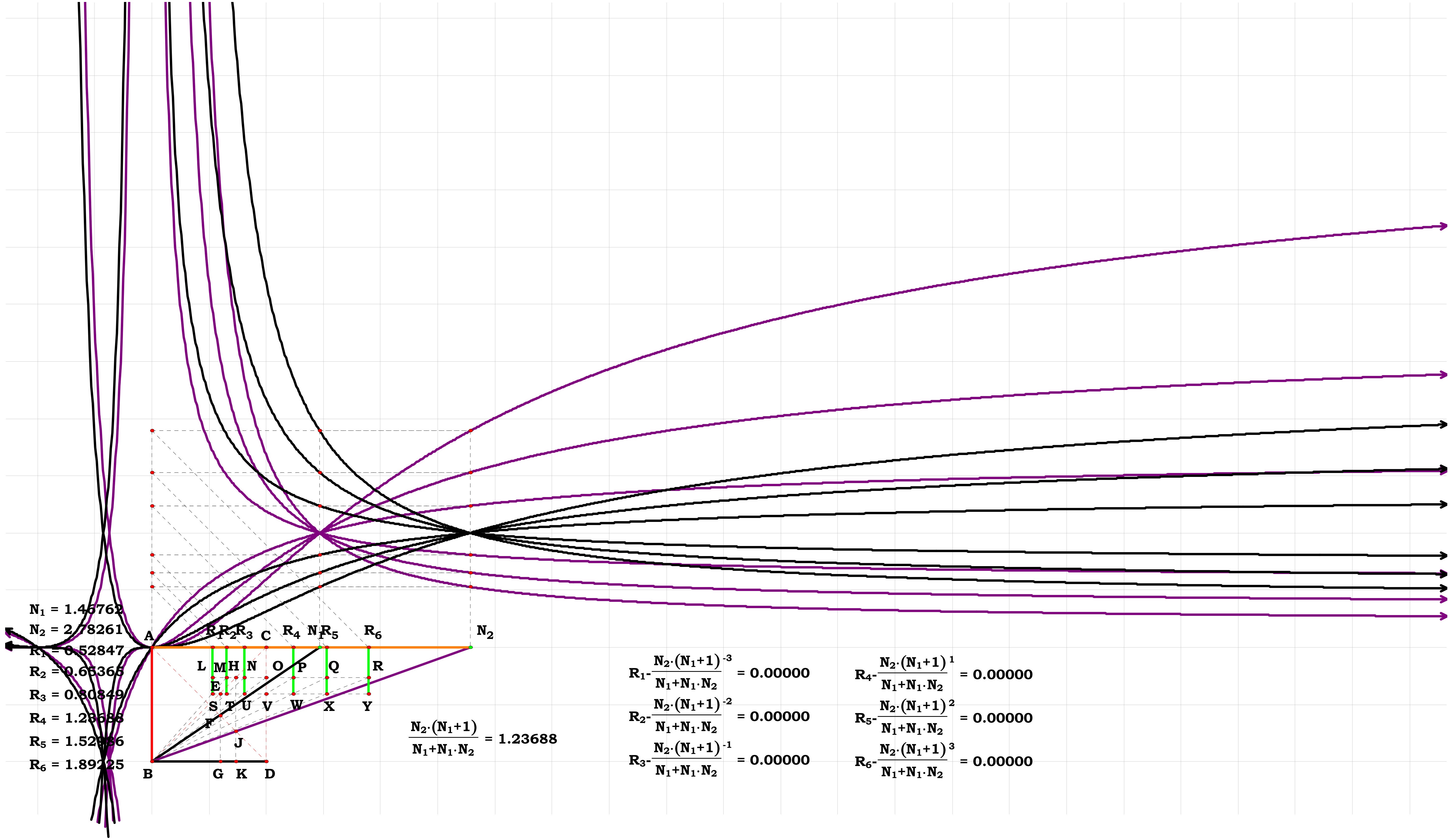
$$R_4 - \frac{N_2 \cdot (N_1 + 1)}{N_1 + N_1 \cdot N_2} = 0 \qquad R_5 - \frac{N_2^{\,2} \cdot (N_1 + 1)^2}{N_1^{\,2} \cdot (N_2 + 1)^2} = 0 \qquad R_6 - \frac{N_2^{\,3} \cdot (N_1 + 1)^3}{N_1^{\,3} \cdot (N_2 + 1)^3} = 0$$

$$R_3 - \frac{N_1 \cdot (N_2 + 1)}{N_2 + N_1 \cdot N_2} = 0 \qquad R_2 - \frac{N_1^{\,2} \cdot (N_2 + 1)^2}{N_2^{\,2} \cdot (N_1 + 1)^2} = 0 \qquad R_1 - \frac{N_1^{\,3} \cdot (N_2 + 1)^3}{N_2^{\,3} \cdot (N_1 + 1)^3} = 0$$

After reducing, reformating and reording:

$$R_1 - \left[\frac{N_2 \cdot (N_1 + 1)}{N_1 + N_1 \cdot N_2}\right]^{-3} = 0 \qquad R_2 - \left[\frac{N_2 \cdot (N_1 + 1)}{N_1 + N_1 \cdot N_2}\right]^{-2} = 0 \qquad R_3 - \left[\frac{N_2 \cdot (N_1 + 1)}{N_1 + N_1 \cdot N_2}\right]^{-1} = 0 \qquad AB - \left[\frac{N_2 \cdot (N_1 + 1)}{N_1 + N_1 \cdot N_2}\right]^{0} = 0$$

$$R_4 - \left[\frac{N_2 \cdot (N_1 + 1)}{N_1 + N_1 \cdot N_2}\right]^{1} = 0 \qquad R_5 - \left[\frac{N_2 \cdot (N_1 + 1)}{N_1 + N_1 \cdot N_2}\right]^{2} = 0 \qquad R_6 - \left[\frac{N_2 \cdot (N_1 + 1)}{N_1 + N_1 \cdot N_2}\right]^{3} = 0$$


$N_1 = 1.46762$
$N_2 = 2.78261$
$R_1 = 0.52847$
$R_2 = 0.65365$
$R_3 = 0.80849$
$R_4 = 1.23688$
$R_5 = 1.52986$
$R_6 = 1.89225$
A
R_1
R_2
R_3
C
R_4
N_1
R_5
R_6
N_2
L
M
H
N
O
P
Q
R
E
S
T
U
V
W
X
Y
F
J
B
G
K
D
$\frac{N_2 \cdot (N_1+1)}{N_1+N_1 \cdot N_2} = 1.23688$
$R_1 - \frac{N_2 \cdot (N_1+1)^{-3}}{N_1+N_1 \cdot N_2} = 0.00000$
$R_2 - \frac{N_2 \cdot (N_1+1)^{-2}}{N_1+N_1 \cdot N_2} = 0.00000$
$R_3 - \frac{N_2 \cdot (N_1+1)^{-1}}{N_1+N_1 \cdot N_2} = 0.00000$
$R_4 - \frac{N_2 \cdot (N_1+1)^{1}}{N_1+N_1 \cdot N_2} = 0.00000$
$R_5 - \frac{N_2 \cdot (N_1+1)^{2}}{N_1+N_1 \cdot N_2} = 0.00000$
$R_6 - \frac{N_2 \cdot (N_1+1)^{3}}{N_1+N_1 \cdot N_2} = 0.00000$

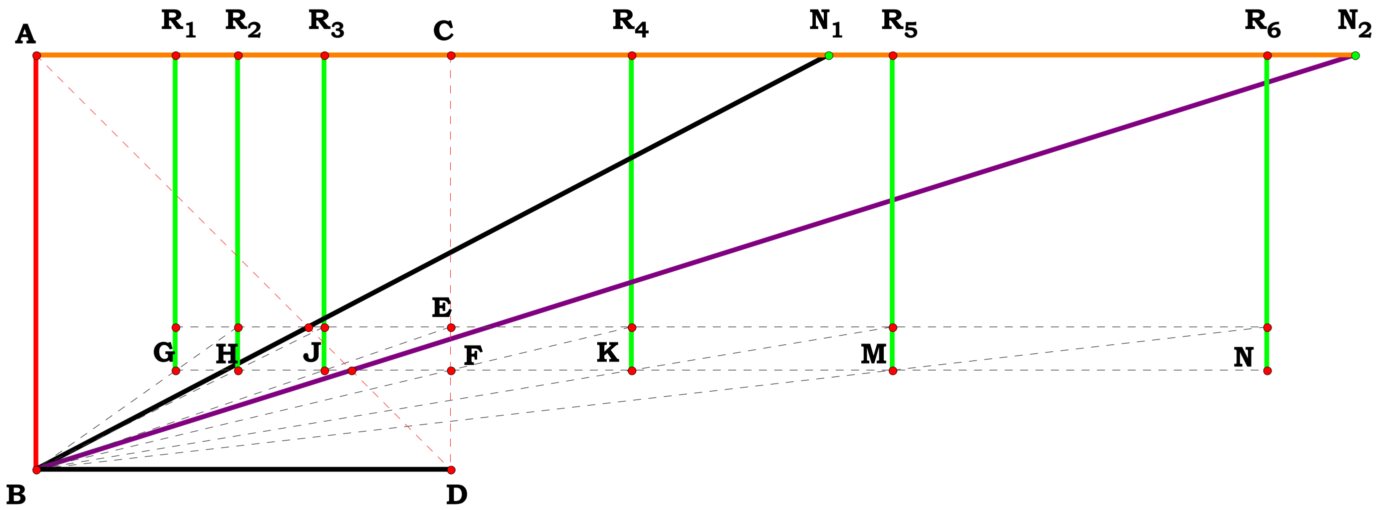
090912-3b

$AB := 1$

$N_1 := 1.90778$

$N_2 := 3.17746$

$N_1 = 1.90778$
$N_2 = 3.17746$
$R_1 = 0.33725$
$R_2 = 0.48451$
$R_3 = 0.69606$
$R_4 = 1.43665$
$R_5 = 2.06396$
$R_6 = 2.96518$



$$DE := \frac{1}{N_1 + 1} \qquad DF := \frac{1}{N_2 + 1}$$

$$R_4 := \frac{1}{DF} \cdot DE \qquad R_5 := \frac{R_4}{DF} \cdot DE \qquad R_6 := \frac{R_5}{DF} \cdot DE$$

$$R_3 := \frac{1}{DE} \cdot DF \qquad R_2 := \frac{R_3}{DE} \cdot DF \qquad R_1 := \frac{R_2}{DE} \cdot DF$$

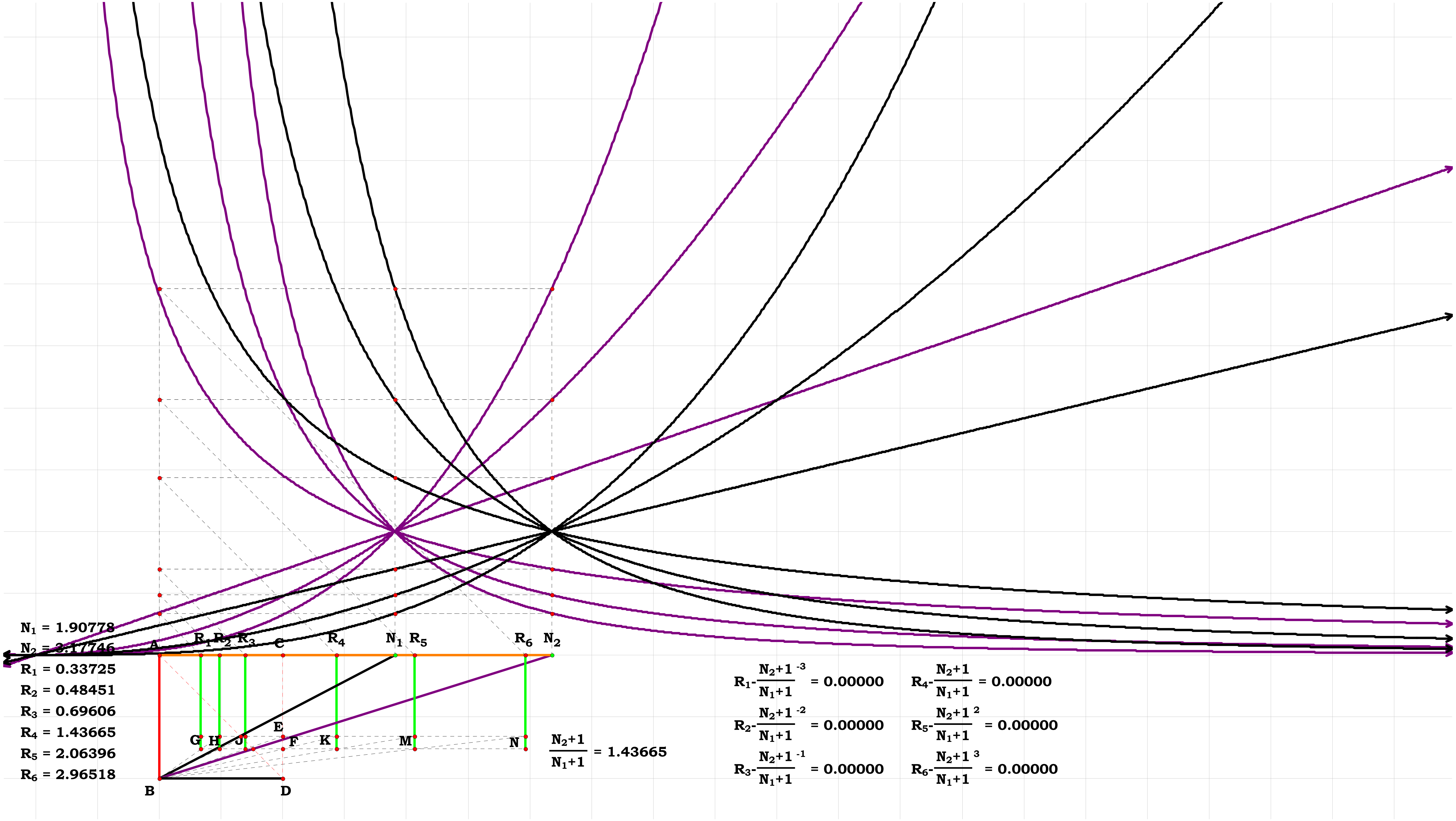
$$R_4 - \frac{N_2 + 1}{N_1 + 1} = 0 \qquad R_5 - \frac{(N_2 + 1)^2}{(N_1 + 1)^2} = 0 \qquad R_6 - \frac{(N_2 + 1)^3}{(N_1 + 1)^3} = 0$$

$$R_3 - \frac{N_1 + 1}{N_2 + 1} = 0 \qquad R_2 - \frac{(N_1 + 1)^2}{(N_2 + 1)^2} = 0 \qquad R_1 - \frac{(N_1 + 1)^3}{(N_2 + 1)^3} = 0$$

After reducing, reformating and reording:

$$R_1 - \left(\frac{N_2 + 1}{N_1 + 1}\right)^{-3} = 0 \qquad R_2 - \left(\frac{N_2 + 1}{N_1 + 1}\right)^{-2} = 0 \qquad R_3 - \left(\frac{N_2 + 1}{N_1 + 1}\right)^{-1} = 0 \qquad AB - \left(\frac{N_2 + 1}{N_1 + 1}\right)^{0} = 0$$

$$R_4 - \left(\frac{N_2 + 1}{N_1 + 1}\right)^{1} = 0 \qquad R_5 - \left[\frac{(N_2 + 1)}{(N_1 + 1)}\right]^{2} = 0 \qquad R_6 - \left[\frac{(N_2 + 1)}{(N_1 + 1)}\right]^{3} = 0$$


N_1 = 1.90778
N_2 = 3.17746
R_1 = 0.33725
R_2 = 0.48451
R_3 = 0.69606
R_4 = 1.43665
R_5 = 2.06396
R_6 = 2.96518
A
R_1
R_2
R_3
C
R_4
N_1
R_5
R_6
N_2
E
G
H
J
F
K
M
N
B
D
$\frac{N_2+1}{N_1+1}$ = 1.43665
$R_1-\frac{N_2+1}{N_1+1}^{-3}$ = 0.00000
$R_2-\frac{N_2+1}{N_1+1}^{-2}$ = 0.00000
$R_3-\frac{N_2+1}{N_1+1}^{-1}$ = 0.00000
$R_4-\frac{N_2+1}{N_1+1}$ = 0.00000
$R_5-\frac{N_2+1}{N_1+1}^{2}$ = 0.00000
$R_6-\frac{N_2+1}{N_1+1}^{3}$ = 0.00000

090912-4

This is identical to the last figure, however, the series is going to start from the units other operational tail.

Looking at an exponential series, one would not think that it had a point of origin, however: In regard to the point of origin for any exponential series, one can, by viewing the waves of a series, find the starting points, or root of any series, or in short, if one knows two or more waves of an exponential series, one can figure out as much of the series as they like from its root; especially if the root is other than the point of origin. If one had two consecutive points of a series, one could simply place a square on it and draw the coversion to the origin and then use squares to plot each of the series, etc.

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2} = 0.83725$$

$$\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1} = 1.12397$$

A = 0.83725
B = 0.94105
C = 1.05771
D = 1.18884
E = 1.33622

F = 0.74490
G = 0.66274
H = 0.58964
I = 0.52461

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}^{0} - A = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}^{1} - B = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}^{2} - C = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}^{3} - D = 0.00000$$

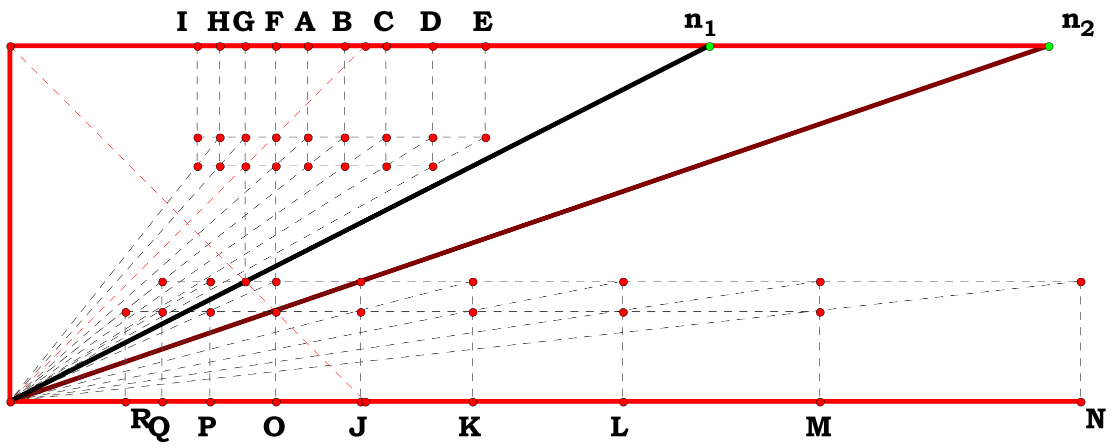
$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}^{4} - E = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}^{-1} - F = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}^{-2} - G = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}^{-3} - H = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}^{-4} - I = 0.00000$$



$$\frac{N_2}{N_1+1} = 0.98482$$

$$\frac{N_2+1}{N_1+1} = 1.32208$$

N_1 = 1.96510
N_2 = 2.92011

J = 0.98482
K = 1.30202
L = 1.72138
M = 2.27580
N = 3.00879

O = 0.74490
P = 0.56343
Q = 0.42617
R = 0.32235

$$\frac{N_2}{N_1+1}\cdot\frac{N_2+1}{N_1+1}^{0} - J = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\frac{N_2+1}{N_1+1}^{1} - K = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\frac{N_2+1}{N_1+1}^{2} - L = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\frac{N_2+1}{N_1+1}^{3} - M = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\frac{N_2+1}{N_1+1}^{4} - N = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\frac{N_2+1}{N_1+1}^{-1} - O = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\frac{N_2+1}{N_1+1}^{-2} - P = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\frac{N_2+1}{N_1+1}^{-3} - Q = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\frac{N_2+1}{N_1+1}^{-4} - R = 0.00000$$

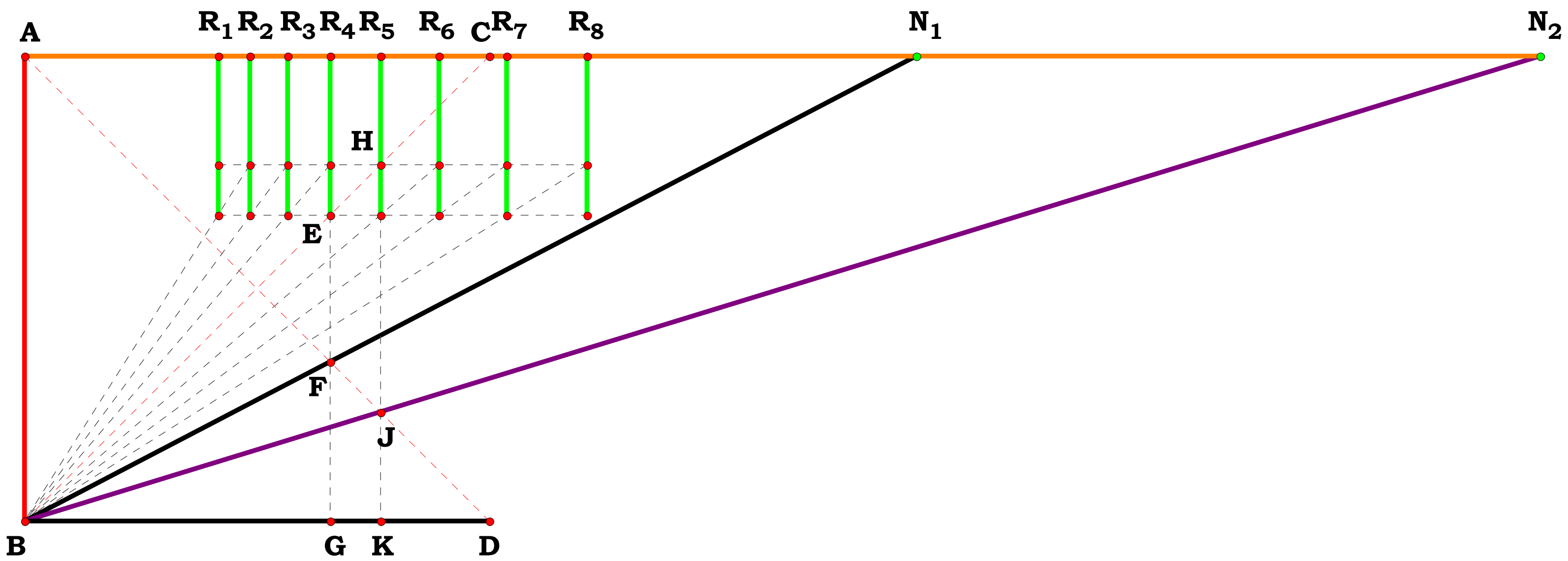
090912-4A

$$AB := 1$$

$$N_1 := 1.91766$$

$$N_2 := 3.25942$$

$N_1 = 1.91766$
$N_2 = 3.25942$
$R_1 = 0.41646$
$R_2 = 0.48488$
$R_3 = 0.56453$
$R_4 = 0.65726$
$R_5 = 0.76523$
$R_6 = 0.89093$
$R_7 = 1.03728$
$R_8 = 1.20767$



$$EG := 1 - \frac{1}{N_1 + 1} \qquad HK := 1 - \frac{1}{N_2 + 1}$$

$$R_4 := EG \qquad R_5 := HK$$

$$R_6 := \frac{R_5}{EG} \cdot HK \qquad R_7 := \frac{R_6}{EG} \cdot HK \qquad R_8 := \frac{R_7}{EG} \cdot HK$$

$$R_3 := \frac{R_4}{HK} \cdot EG \qquad R_2 := \frac{R_3}{HK} \cdot EG \qquad R_1 := \frac{R_2}{HK} \cdot EG$$

$$R_4 - \frac{N_1}{N_1 + 1} = 0 \qquad R_5 - \frac{N_2}{N_2 + 1} = 0 \qquad \frac{HK}{EG} - \frac{N_2 \cdot (N_1 + 1)}{N_1 \cdot (N_2 + 1)} = 0 \qquad \frac{N_1}{N_1 + 1} \cdot \frac{N_2 \cdot (N_1 + 1)}{N_1 \cdot (N_2 + 1)} = 0.765226$$

One might make an argument that every series should comprise two distinct parts, one, the starting point of the series, and the other the index, as in the following. I would imagine that such an arrangement would make series a whole lot easier to work with.

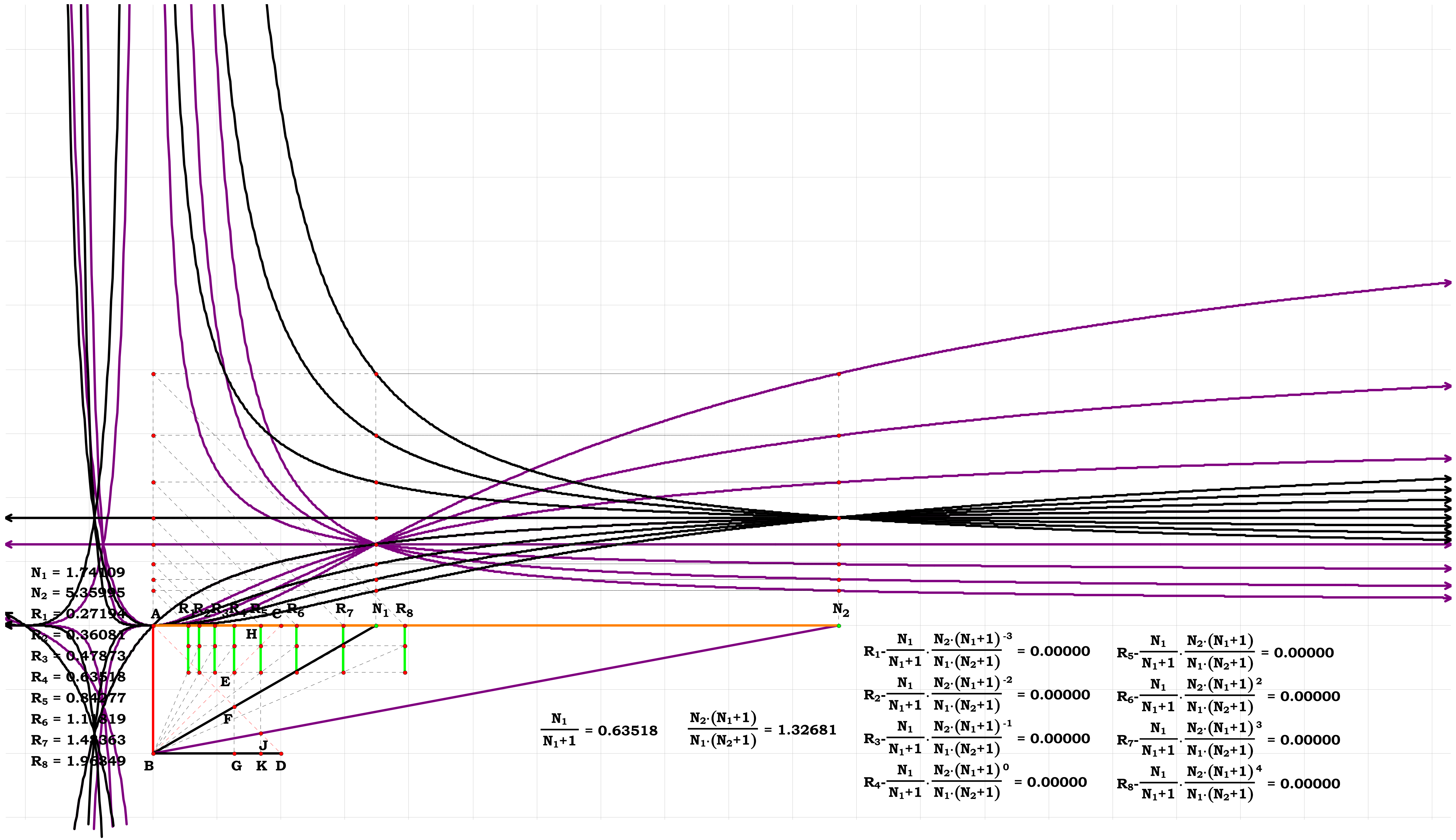
$$R_1 - \frac{N_1}{N_1 + 1} \cdot \left[\frac{N_2 \cdot (N_1 + 1)}{N_1 \cdot (N_2 + 1)}\right]^{-3} = 0 \qquad R_2 - \frac{N_1}{N_1 + 1} \cdot \left[\frac{N_2 \cdot (N_1 + 1)}{N_1 \cdot (N_2 + 1)}\right]^{-2} = 0 \qquad R_3 - \frac{N_1}{N_1 + 1} \cdot \left[\frac{N_2 \cdot (N_1 + 1)}{N_1 \cdot (N_2 + 1)}\right]^{-1} = 0$$

$$R_4 - \frac{N_1}{N_1 + 1} \cdot \left[\frac{N_2 \cdot (N_1 + 1)}{N_1 \cdot (N_2 + 1)}\right]^{0} = 0 \qquad R_5 - \frac{N_1}{N_1 + 1} \cdot \frac{N_2 \cdot (N_1 + 1)}{N_1 \cdot (N_2 + 1)} = 0 \qquad \frac{N_1}{N_1 + 1} \cdot \frac{N_2 \cdot (N_1 + 1)}{N_1 \cdot (N_2 + 1)} = 0.765226$$

$$R_6 - \frac{N_1}{N_1 + 1} \cdot \left[\frac{N_2 \cdot (N_1 + 1)}{N_1 \cdot (N_2 + 1)}\right]^{2} = 0 \qquad R_7 - \frac{N_1}{N_1 + 1} \cdot \left[\frac{N_2 \cdot (N_1 + 1)}{N_1 \cdot (N_2 + 1)}\right]^{3} = 0 \qquad R_8 - \frac{N_1}{N_1 + 1} \cdot \left[\frac{N_2 \cdot (N_1 + 1)}{N_1 \cdot (N_2 + 1)}\right]^{4} = 0$$

$R_1 = 0.416465$
$R_2 = 0.484876$
$R_3 = 0.564526$
$R_4 = 0.65726$

$R_5 = 0.765226$
$R_6 = 0.890928$
$R_7 = 1.037279$
$R_8 = 1.207671$



$$\frac{N_1}{N_1+1} = 0.63518$$

$$\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)} = 1.32681$$

$$R_1 - \frac{N_1}{N_1+1}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}^{-3} = 0.00000$$

$$R_2 - \frac{N_1}{N_1+1}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}^{-2} = 0.00000$$

$$R_3 - \frac{N_1}{N_1+1}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}^{-1} = 0.00000$$

$$R_4 - \frac{N_1}{N_1+1}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}^{0} = 0.00000$$

$$R_5 - \frac{N_1}{N_1+1}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)} = 0.00000$$

$$R_6 - \frac{N_1}{N_1+1}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}^{2} = 0.00000$$

$$R_7 - \frac{N_1}{N_1+1}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}^{3} = 0.00000$$

$$R_8 - \frac{N_1}{N_1+1}\cdot\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}^{4} = 0.00000$$

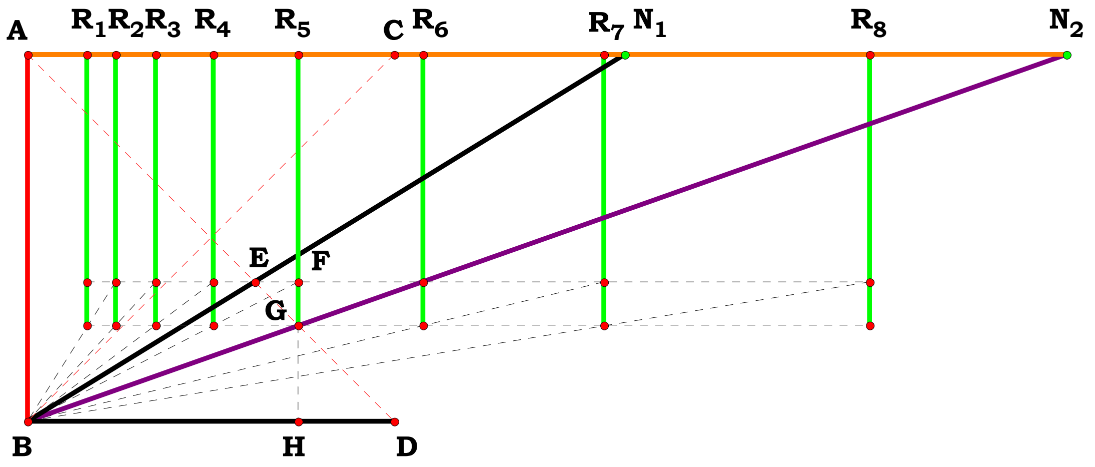
090912-4B

$AB := 1$

$N_1 := 1.62767$

$N_2 := 2.83274$

$N_1 = 1.62767$
$N_2 = 2.83274$
$R_1 = 0.16328$
$R_2 = 0.23817$
$R_3 = 0.34739$
$R_4 = 0.50671$
$R_5 = 0.73909$
$R_6 = 1.07805$
$R_7 = 1.57245$
$R_8 = 2.29359$



$$FH := \frac{1}{N_1 + 1} \qquad GH := \frac{1}{N_2 + 1} \qquad R_5 := 1 - GH$$

$$R_6 := \frac{R_5}{GH} \cdot FH \qquad R_7 := \frac{R_6}{GH} \cdot FH \qquad R_8 := \frac{R_7}{GH} \cdot FH$$

$$R_4 := \frac{R_5}{FH} \cdot GH \qquad R_3 := \frac{R_4}{FH} \cdot GH \qquad R_2 := \frac{R_3}{FH} \cdot GH \qquad R_1 := \frac{R_2}{FH} \cdot GH$$

$$R_5 - \frac{N_2}{N_2 + 1} = 0 \qquad \frac{FH}{GH} - \frac{N_2 + 1}{N_1 + 1} = 0$$

$$R_1 - \frac{N_2}{N_2 + 1} \cdot \left(\frac{N_2 + 1}{N_1 + 1}\right)^{-4} = 0 \qquad R_2 - \frac{N_2}{N_2 + 1} \cdot \left(\frac{N_2 + 1}{N_1 + 1}\right)^{-3} = 0 \qquad R_3 - \frac{N_2}{N_2 + 1} \cdot \left(\frac{N_2 + 1}{N_1 + 1}\right)^{-2} = \blacksquare \qquad R_4 - \frac{N_2}{N_2 + 1} \cdot \left(\frac{N_2 + 1}{N_1 + 1}\right)^{-1} = 0$$

$$R_5 - \frac{N_2}{N_2 + 1} \cdot \left(\frac{N_2 + 1}{N_1 + 1}\right)^{0} = 0 \qquad R_6 - \frac{N_2}{N_2 + 1} \cdot \left(\frac{N_2 + 1}{N_1 + 1}\right)^{1} = 0 \qquad R_7 - \frac{N_2}{N_2 + 1} \cdot \left(\frac{N_2 + 1}{N_1 + 1}\right)^{2} = 0 \qquad R_8 - \frac{N_2}{N_2 + 1} \cdot \left(\frac{N_2 + 1}{N_1 + 1}\right)^{3} = 0$$

$R_1 = 0.163284$

$R_2 = 0.238167$

$R_3 = 0.347392$

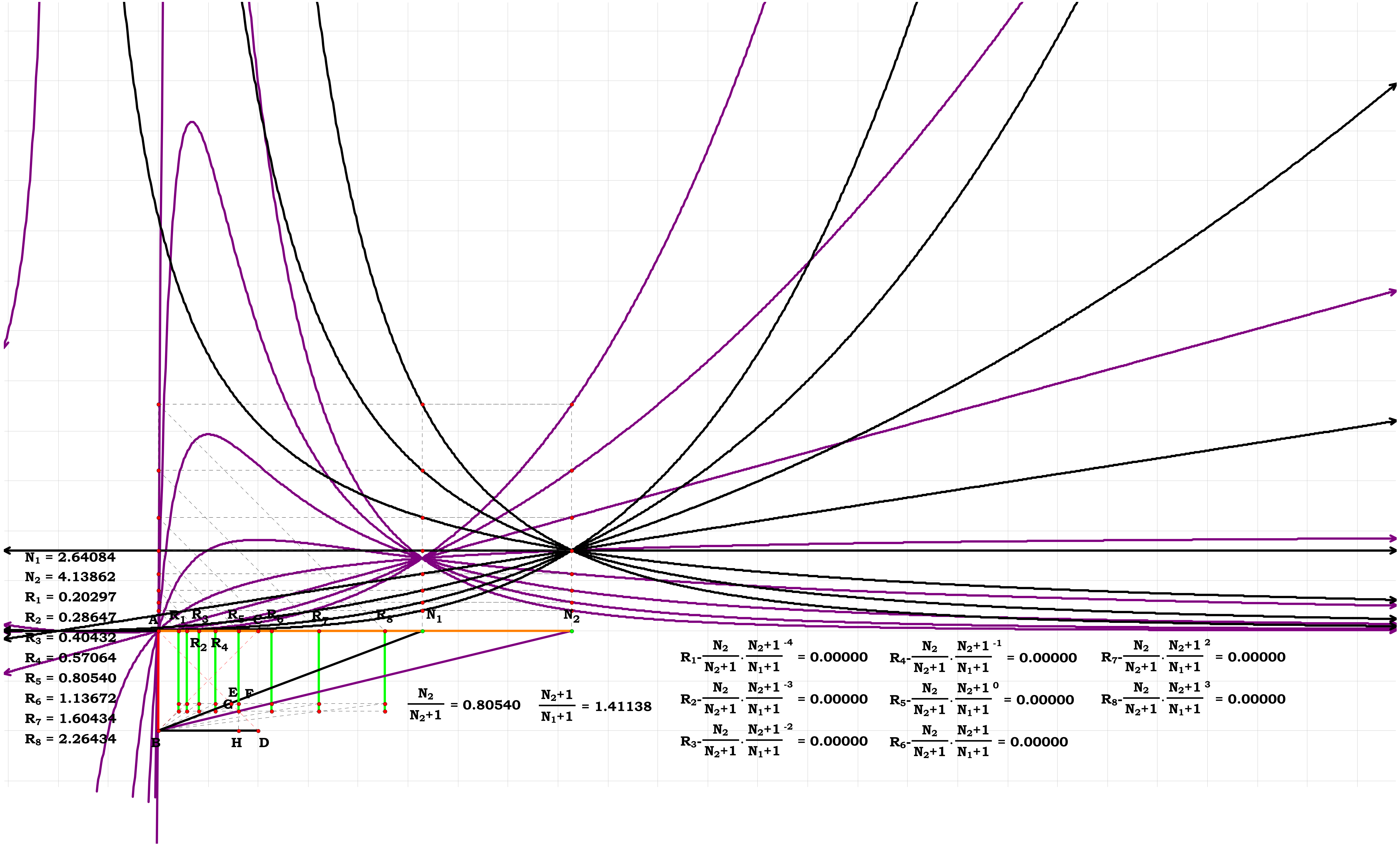
$R_4 = 0.506709$

$R_5 = 0.73909$

$R_6 = 1.078043$

$R_7 = 1.572441$

$R_8 = 2.293575$


$N_1 = 2.64084$
$N_2 = 4.13862$
$R_1 = 0.20297$
$R_2 = 0.28647$
$R_3 = 0.40432$
$R_4 = 0.57064$
$R_5 = 0.80540$
$R_6 = 1.13672$
$R_7 = 1.60434$
$R_8 = 2.26434$
A
R_1
R_3
R_5
C
R_6
R_7
R_8
N_1
N_2
R_2
R_4
E
F
G
B
H
D
$\frac{N_2}{N_2+1} = 0.80540$
$\frac{N_2+1}{N_1+1} = 1.41138$
$R_1 - \frac{N_2}{N_2+1} \cdot \frac{N_2+1}{N_1+1}^{-4} = 0.00000$
$R_2 - \frac{N_2}{N_2+1} \cdot \frac{N_2+1}{N_1+1}^{-3} = 0.00000$
$R_3 - \frac{N_2}{N_2+1} \cdot \frac{N_2+1}{N_1+1}^{-2} = 0.00000$
$R_4 - \frac{N_2}{N_2+1} \cdot \frac{N_2+1}{N_1+1}^{-1} = 0.00000$
$R_5 - \frac{N_2}{N_2+1} \cdot \frac{N_2+1}{N_1+1}^{0} = 0.00000$
$R_6 - \frac{N_2}{N_2+1} \cdot \frac{N_2+1}{N_1+1} = 0.00000$
$R_7 - \frac{N_2}{N_2+1} \cdot \frac{N_2+1}{N_1+1}^{2} = 0.00000$
$R_8 - \frac{N_2}{N_2+1} \cdot \frac{N_2+1}{N_1+1}^{3} = 0.00000$

090912-5

$B = 1.31080$
$C = 1.71820$
$D = 2.25222$
$E = 2.95221$
$F = 3.86977$
$G = 5.07250$

$$\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)} = 1.31080 \qquad \frac{N_1\cdot(N_2-1)^1}{N_2\cdot(N_1-1)}-B = 0.00000$$

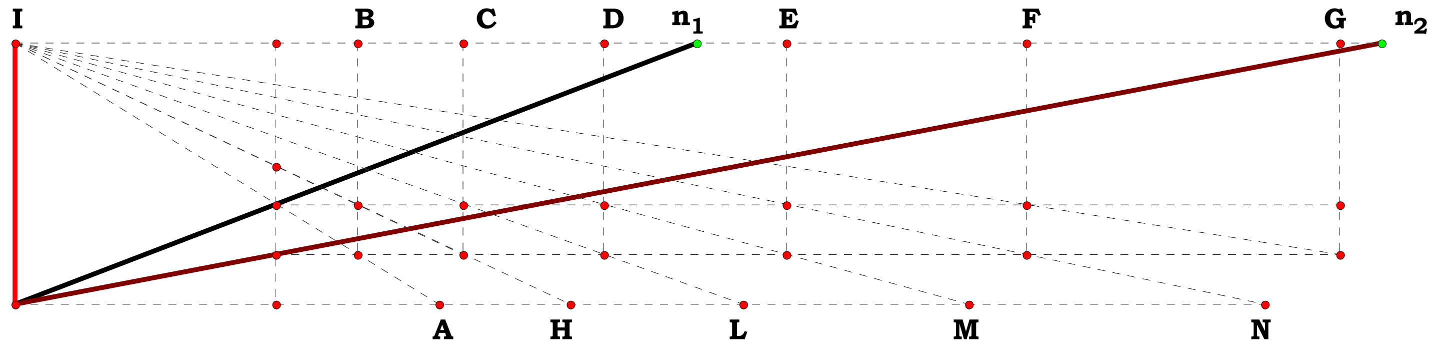
$$\frac{N_1\cdot(N_2-1)^2}{N_2\cdot(N_1-1)} = 1.71820 \qquad \frac{N_1\cdot(N_2-1)^2}{N_2\cdot(N_1-1)}-C = 0.00000$$

$$\frac{N_1\cdot(N_2-1)^3}{N_2\cdot(N_1-1)} = 2.25222 \qquad \frac{N_1\cdot(N_2-1)^3}{N_2\cdot(N_1-1)}-D = 0.00000$$

$$\frac{N_1\cdot(N_2-1)^4}{N_2\cdot(N_1-1)} = 2.95221 \qquad \frac{N_1\cdot(N_2-1)^4}{N_2\cdot(N_1-1)}-E = 0.00000$$

$$\frac{N_1\cdot(N_2-1)^5}{N_2\cdot(N_1-1)} = 3.86977 \qquad \frac{N_1\cdot(N_2-1)^5}{N_2\cdot(N_1-1)}-F = 0.00000$$

$$\frac{N_1\cdot(N_2-1)^6}{N_2\cdot(N_1-1)} = 5.07250 \qquad \frac{N_1\cdot(N_2-1)^6}{N_2\cdot(N_1-1)}-G = 0.00000$$



$$\frac{N_1}{N_1-1}-A = 0.00000$$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2} = 2.12423$$

$N_1 = 2.61146$
$N_2 = 5.23175$

$A = 1.62056$
$H = 2.12423$
$L = 2.78444$
$M = 3.64985$
$N = 4.78423$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\frac{N_1\cdot(N_2-1)^{-1}}{N_2\cdot(N_1-1)} = 1.62056 \qquad \left(\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\frac{N_1\cdot(N_2-1)^{-1}}{N_2\cdot(N_1-1)}\right)-A = 0.00000$$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\frac{N_1\cdot(N_2-1)^0}{N_2\cdot(N_1-1)} = 2.12423 \qquad \left(\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\frac{N_1\cdot(N_2-1)^0}{N_2\cdot(N_1-1)}\right)-H = 0.00000$$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\frac{N_1\cdot(N_2-1)^1}{N_2\cdot(N_1-1)} = 2.78444 \qquad \left(\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\frac{N_1\cdot(N_2-1)^1}{N_2\cdot(N_1-1)}\right)-L = 0.00000$$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\frac{N_1\cdot(N_2-1)^2}{N_2\cdot(N_1-1)} = 3.64985 \qquad \left(\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\frac{N_1\cdot(N_2-1)^2}{N_2\cdot(N_1-1)}\right)-M = 0.00000$$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\frac{N_1\cdot(N_2-1)^3}{N_2\cdot(N_1-1)} = 4.78423 \qquad \left(\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\frac{N_1\cdot(N_2-1)^3}{N_2\cdot(N_1-1)}\right)-N = 0.00000$$

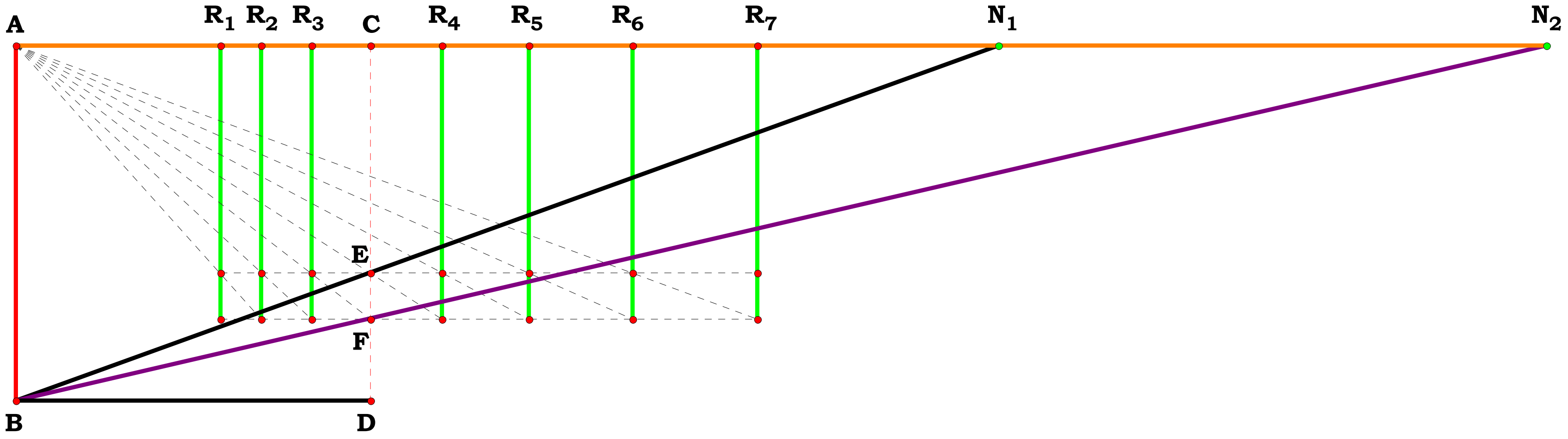
090912-5a

$AB := 1$

$N_1 := 2.76966$

$N_2 := 4.31164$

$N_1 = 2.76966$
$N_2 = 4.31164$
$R_1 = 0.57569$
$R_2 = 0.69203$
$R_3 = 0.83188$
$R_4 = 1.20209$
$R_5 = 1.44502$
$R_6 = 1.73705$
$R_7 = 2.08809$



$$DE := \frac{1}{N_1} \qquad DF := \frac{1}{N_2}$$

$$R_3 := \frac{1}{1-DF}\cdot(1-DE) \qquad R_4 := \frac{1}{1-DE}\cdot(1-DF)$$

$$R_2 := \frac{R_3}{1-DF}\cdot(1-DE) \qquad R_1 := \frac{R_2}{1-DF}\cdot(1-DE)$$

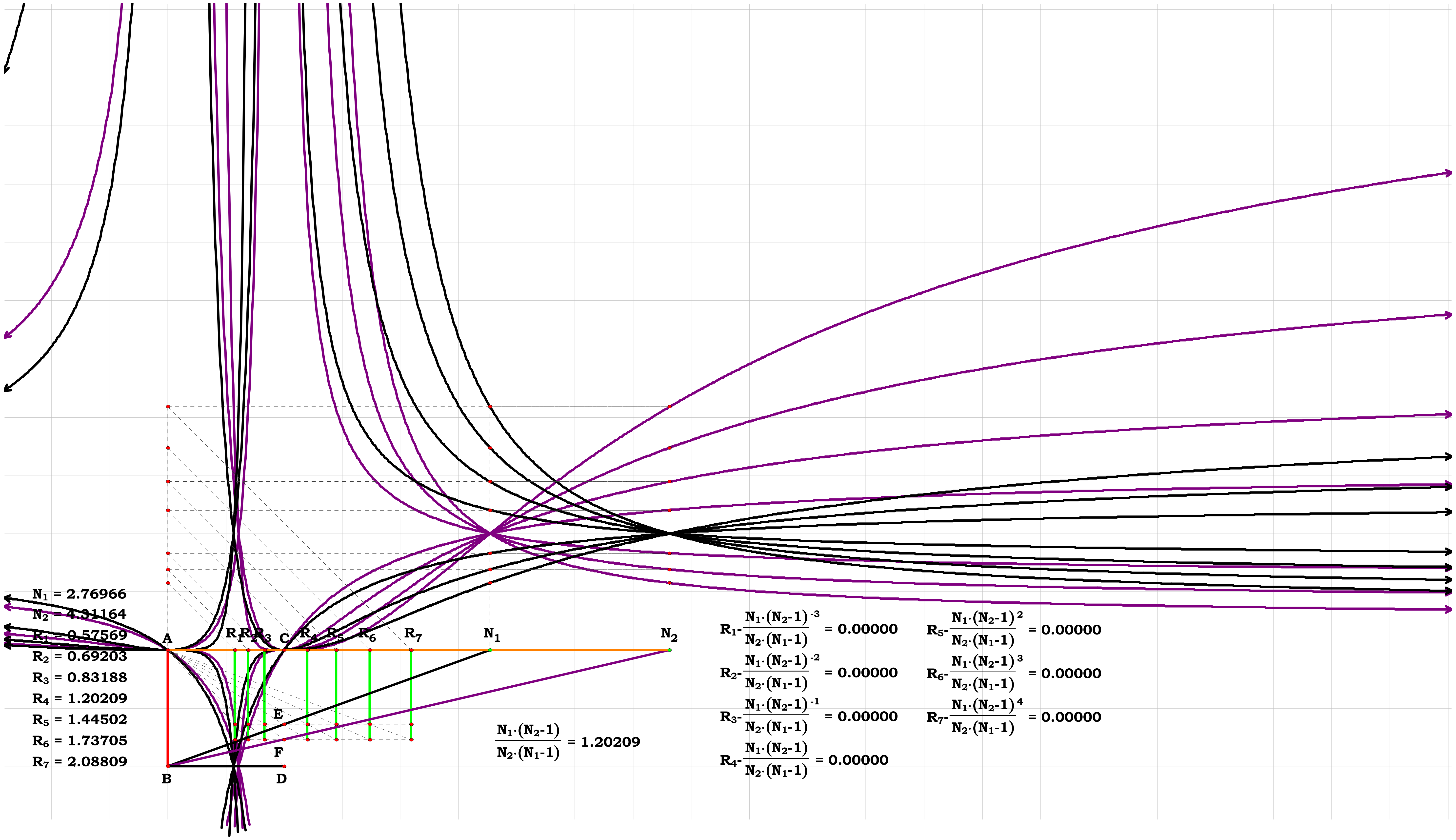
$$R_5 := \frac{R_4}{1-DE}\cdot(1-DF) \qquad R_6 := \frac{R_5}{1-DE}\cdot(1-DF) \qquad R_7 := \frac{R_6}{1-DE}\cdot(1-DF)$$

$R_1 = 0.575689$
$R_2 = 0.692031$
$R_3 = 0.831884$
$R_4 = 1.202091$
$R_5 = 1.445022$
$R_6 = 1.737048$
$R_7 = 2.088089$

$$R_4 - \frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)} = 0$$

$$R_1 - \left[\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right]^{-3} = 0 \qquad R_2 - \left[\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right]^{-2} = 0 \qquad R_3 - \left[\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right]^{-1} = 0 \qquad AB - \left[\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right]^{0} = 0$$

$$R_4 - \left[\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right]^{1} = 0 \qquad R_5 - \left[\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right]^{2} = 0 \qquad R_6 - \left[\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right]^{3} = 0 \qquad R_7 - \left[\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right]^{4} = 0$$



$N_1 = 2.76966$
$N_2 = 4.31164$
$R_1 = 0.57569$
$R_2 = 0.69203$
$R_3 = 0.83188$
$R_4 = 1.20209$
$R_5 = 1.44502$
$R_6 = 1.73705$
$R_7 = 2.08809$
A
R_1
R_2
R_3
C
R_4
R_5
R_6
R_7
N_1
N_2
E
F
B
D
$\frac{N_1 \cdot (N_2-1)}{N_2 \cdot (N_1-1)} = 1.20209$
$R_1 - \frac{N_1 \cdot (N_2-1)^{-3}}{N_2 \cdot (N_1-1)} = 0.00000$
$R_2 - \frac{N_1 \cdot (N_2-1)^{-2}}{N_2 \cdot (N_1-1)} = 0.00000$
$R_3 - \frac{N_1 \cdot (N_2-1)^{-1}}{N_2 \cdot (N_1-1)} = 0.00000$
$R_4 - \frac{N_1 \cdot (N_2-1)}{N_2 \cdot (N_1-1)} = 0.00000$
$R_5 - \frac{N_1 \cdot (N_2-1)^{2}}{N_2 \cdot (N_1-1)} = 0.00000$
$R_6 - \frac{N_1 \cdot (N_2-1)^{3}}{N_2 \cdot (N_1-1)} = 0.00000$
$R_7 - \frac{N_1 \cdot (N_2-1)^{4}}{N_2 \cdot (N_1-1)} = 0.00000$

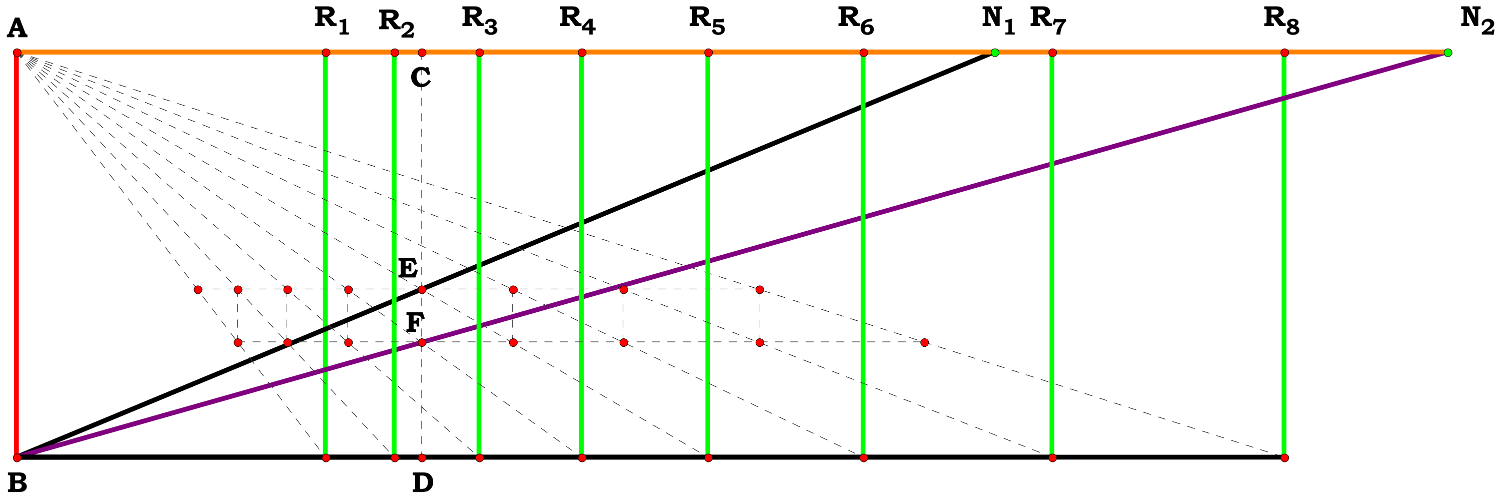
090912-5a

$$AB := 1$$

$$N_1 := 2.41427$$

$$N_2 := 3.52979$$

$N_1 = 2.41427$
$N_2 = 3.52979$
$R_1 = 0.76190$
$R_2 = 0.93215$
$R_3 = 1.14045$
$R_4 = 1.39529$
$R_5 = 1.70708$
$R_6 = 2.08854$
$R_7 = 2.55523$
$R_8 = 3.12622$



$$DE := \frac{1}{N_1} \qquad DF := \frac{1}{N_2} \qquad R_4 := \frac{1}{1-DF} \qquad R_5 := \frac{1}{1-DE}$$

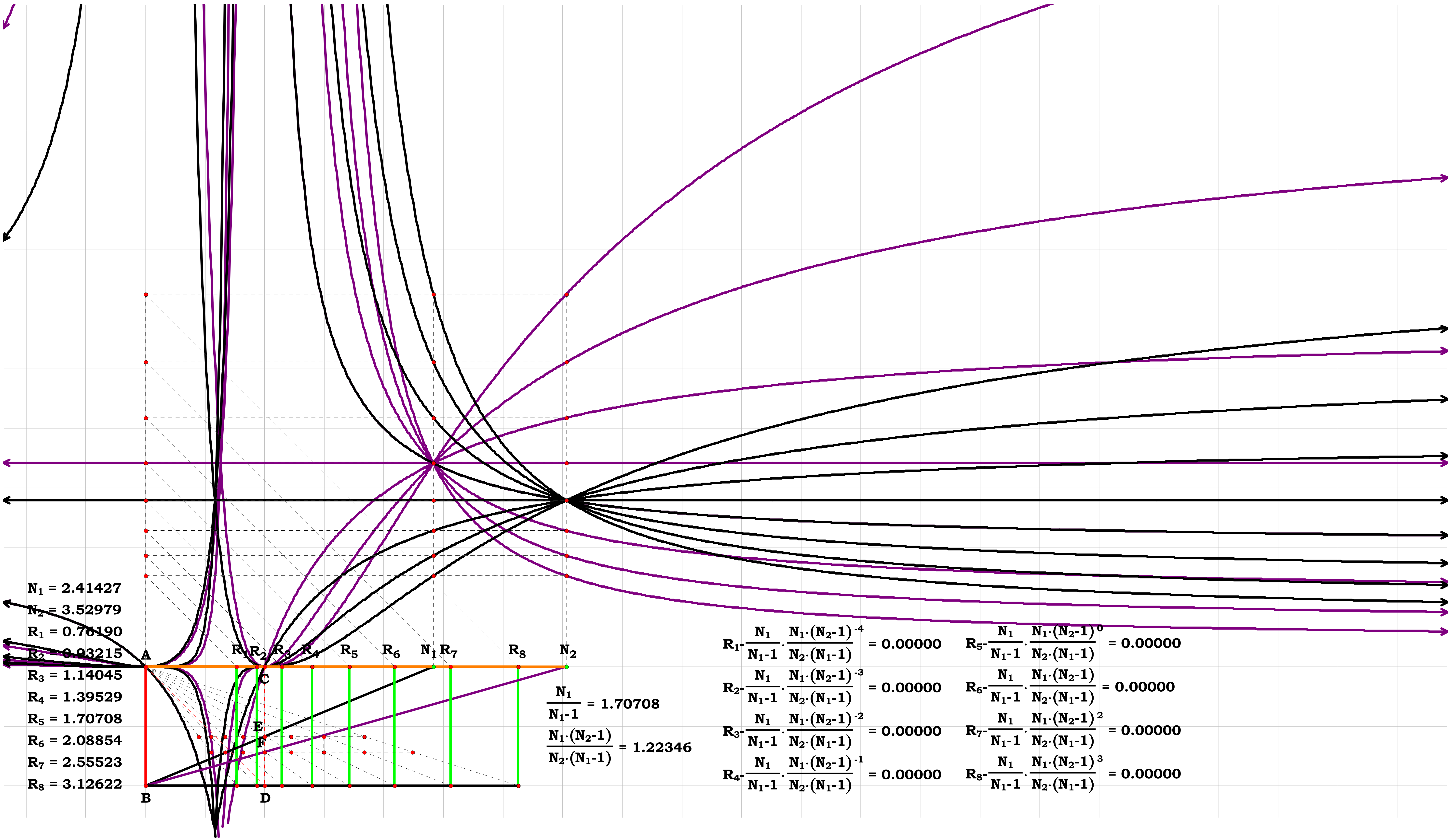
$$R_3 := \frac{R_4\cdot(1-DE)}{1-DF} \qquad R_2 := \frac{R_3\cdot(1-DE)}{1-DF} \qquad R_1 := \frac{R_2\cdot(1-DE)}{1-DF}$$

$$R_6 := \frac{R_5\cdot(1-DF)}{1-DE} \qquad R_7 := \frac{R_6\cdot(1-DF)}{1-DE} \qquad R_8 := \frac{R_7\cdot(1-DF)}{1-DE}$$

$$\frac{1-DF}{1-DE} - \frac{N_1\cdot\left(N_2-1\right)}{N_2\cdot\left(N_1-1\right)} = 0$$

$$R_1 - \frac{N_1}{N_1-1}\cdot\left[\frac{N_1\cdot\left(N_2-1\right)}{N_2\cdot\left(N_1-1\right)}\right]^{-4} = 0 \qquad R_2 - \frac{N_1}{N_1-1}\cdot\left[\frac{N_1\cdot\left(N_2-1\right)}{N_2\cdot\left(N_1-1\right)}\right]^{-3} = 0 \qquad R_3 - \frac{N_1}{N_1-1}\cdot\left[\frac{N_1\cdot\left(N_2-1\right)}{N_2\cdot\left(N_1-1\right)}\right]^{-2} = 0 \qquad R_4 - \frac{N_1}{N_1-1}\cdot\left[\frac{N_1\cdot\left(N_2-1\right)}{N_2\cdot\left(N_1-1\right)}\right]^{-1} = 0$$

$$R_5 - \frac{N_1}{N_1-1}\cdot\left[\frac{N_1\cdot\left(N_2-1\right)}{N_2\cdot\left(N_1-1\right)}\right]^{0} = 0 \qquad R_6 - \frac{N_1}{N_1-1}\cdot\left[\frac{N_1\cdot\left(N_2-1\right)}{N_2\cdot\left(N_1-1\right)}\right]^{1} = 0 \qquad R_7 - \frac{N_1}{N_1-1}\cdot\left[\frac{N_1\cdot\left(N_2-1\right)}{N_2\cdot\left(N_1-1\right)}\right]^{2} = 0 \qquad R_8 - \frac{N_1}{N_1-1}\cdot\left[\frac{N_1\cdot\left(N_2-1\right)}{N_2\cdot\left(N_1-1\right)}\right]^{3} = 0$$


$N_1 = 2.41427$
$N_2 = 3.52979$
$R_1 = 0.76190$
$R_2 = 0.93215$
$R_3 = 1.14045$
$R_4 = 1.39529$
$R_5 = 1.70708$
$R_6 = 2.08854$
$R_7 = 2.55523$
$R_8 = 3.12622$
A
B
C
D
E
F
R_1
R_2
R_3
R_4
R_5
R_6
N_1
R_7
R_8
N_2
$\frac{N_1}{N_1-1} = 1.70708$
$\frac{N_1 \cdot (N_2-1)}{N_2 \cdot (N_1-1)} = 1.22346$
$R_1 - \frac{N_1}{N_1-1} \cdot \frac{N_1 \cdot (N_2-1)}{N_2 \cdot (N_1-1)}^{-4} = 0.00000$
$R_2 - \frac{N_1}{N_1-1} \cdot \frac{N_1 \cdot (N_2-1)}{N_2 \cdot (N_1-1)}^{-3} = 0.00000$
$R_3 - \frac{N_1}{N_1-1} \cdot \frac{N_1 \cdot (N_2-1)}{N_2 \cdot (N_1-1)}^{-2} = 0.00000$
$R_4 - \frac{N_1}{N_1-1} \cdot \frac{N_1 \cdot (N_2-1)}{N_2 \cdot (N_1-1)}^{-1} = 0.00000$
$R_5 - \frac{N_1}{N_1-1} \cdot \frac{N_1 \cdot (N_2-1)}{N_2 \cdot (N_1-1)}^{0} = 0.00000$
$R_6 - \frac{N_1}{N_1-1} \cdot \frac{N_1 \cdot (N_2-1)}{N_2 \cdot (N_1-1)} = 0.00000$
$R_7 - \frac{N_1}{N_1-1} \cdot \frac{N_1 \cdot (N_2-1)}{N_2 \cdot (N_1-1)}^{2} = 0.00000$
$R_8 - \frac{N_1}{N_1-1} \cdot \frac{N_1 \cdot (N_2-1)}{N_2 \cdot (N_1-1)}^{3} = 0.00000$

090912-6

One of the original methods I learned of doing exponential progression was by using what I call the unit circle. In this plate, I simply add the two figures together. I will do the exponential divisions in the unit circle.

One might consider, how the figures add together effortlessly when they are conceived of correctly. The unit circle, and the unit square, and the unit line, all work together using the same language, each depend simply upon the recursion of the unit, as does all of the language.

$N_1 = 1.21811$

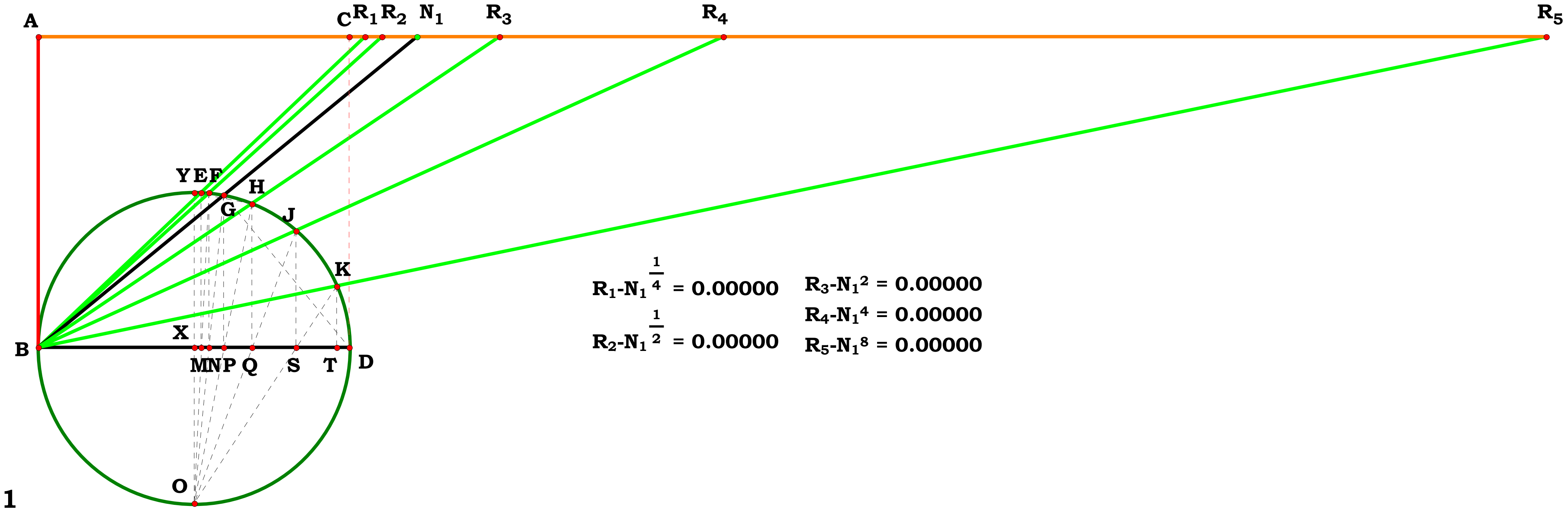
$R_1 = 1.05056$

$R_2 = 1.10368$

$R_3 = 1.48380$

$R_4 = 2.20166$

$R_5 = 4.84731$



$R_1 - N_1^{\frac{1}{4}} = 0.00000$

$R_2 - N_1^{\frac{1}{2}} = 0.00000$

$R_3 - N_1^2 = 0.00000$

$R_4 - N_1^4 = 0.00000$

$R_5 - N_1^8 = 0.00000$

$AB := 1$

$N_1 := 1.21811$

$$BN_1 := \sqrt{AB^2 + N_1^2} \qquad BG := \frac{N_1}{BN_1} \qquad BP := N_1 \cdot \frac{BG}{BN_1} \qquad OX := \frac{AB}{2}$$

$$MP := BP - OX \qquad OP := \sqrt{OX^2 + MP^2} \qquad OH := \frac{OX \cdot AB}{OP} \qquad PH := OH - OP$$

$$PQ := \frac{MP \cdot PH}{OP} \qquad BQ := OX + MP + PQ \qquad HQ := \sqrt{BQ \cdot (AB - BQ)}$$

$$R_3 := \frac{BQ}{HQ} \qquad R_3 = 1.483792$$

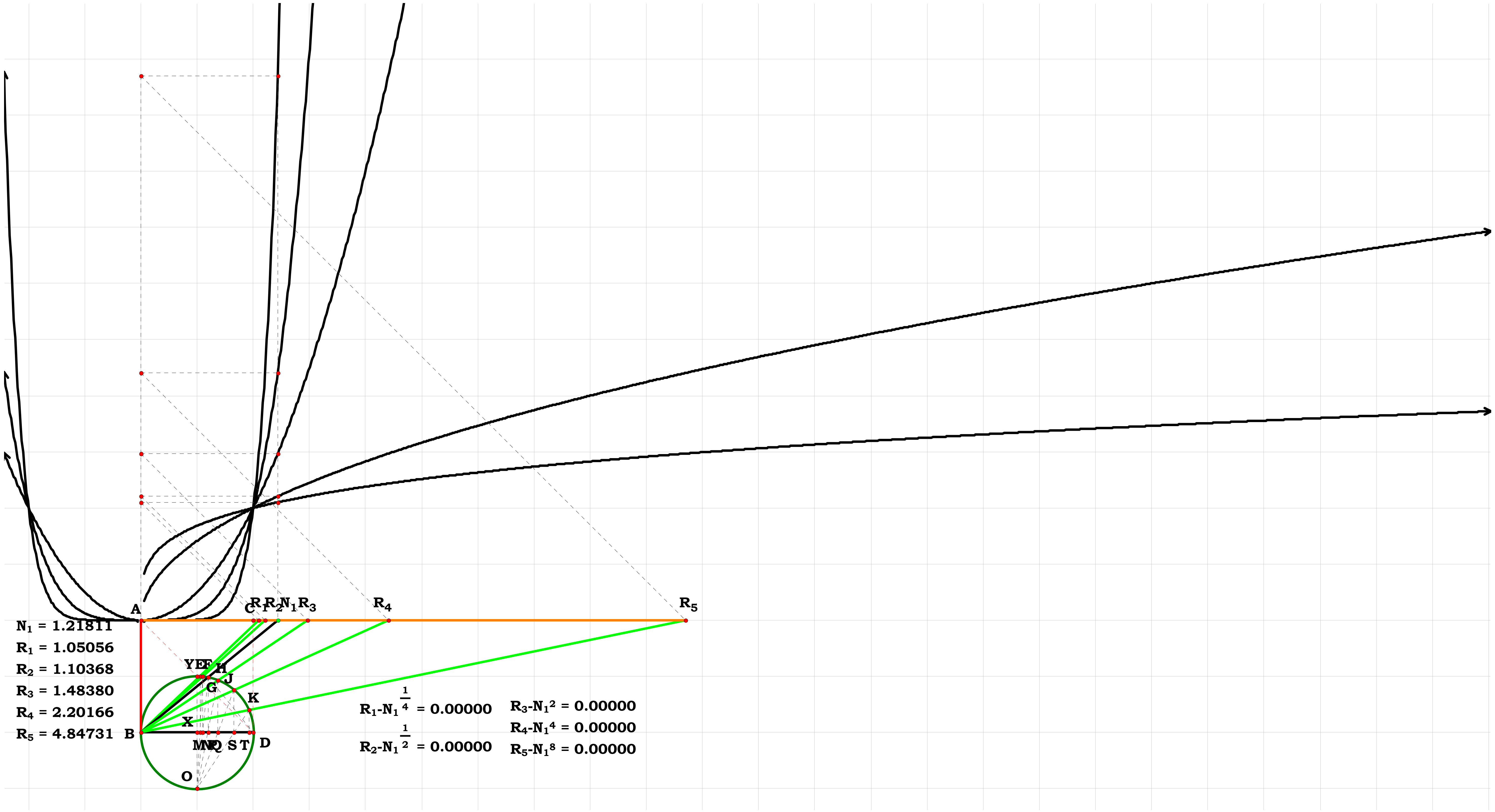
Now, Mathcad will come up with the following and simply refuse to reduce it.

$$R_3 - \frac{N_1^{\,4}}{\sqrt{\frac{N_1^{\,4}}{\left(N_1^{\,4}+1\right)^2} \cdot \left(N_1^{\,4}+1\right)}} = 0$$

Being a dumb program, only doing what it is told, we do not have to worry about hurting its feelings by finishing the job. One might find that in many math programs, one still has to give them a helping hand.

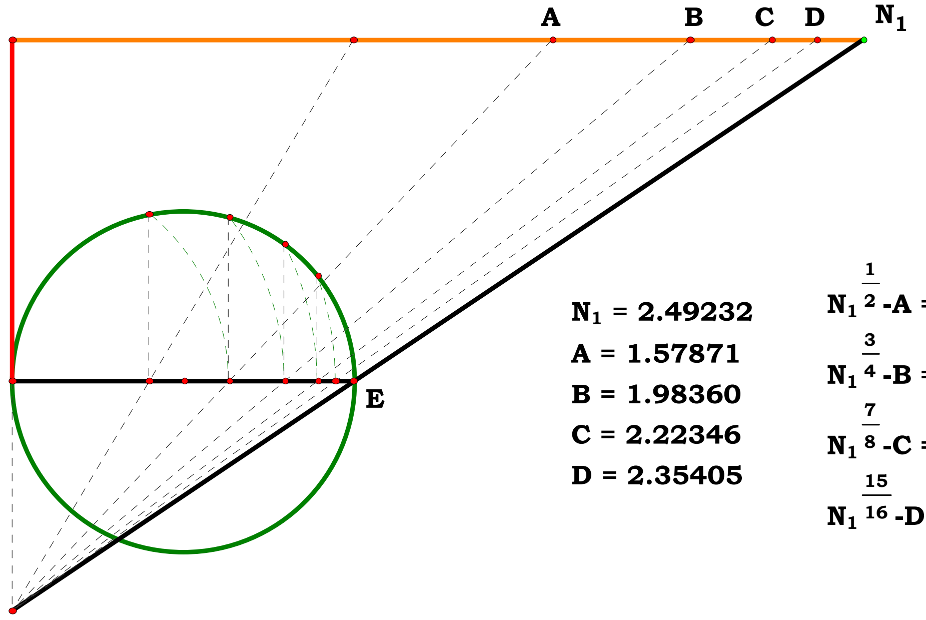
Simply repeat the process for every value one wishes to find, or until one can take a hint.

$$R_3 - N_1^{\,2} = 0$$


A
C
R_1
R_2
N_1
R_3
R_4
R_5
$N_1 = 1.21811$
$R_1 = 1.05056$
$R_2 = 1.10368$
$R_3 = 1.48380$
$R_4 = 2.20166$
$R_5 = 4.84731$
B
Y
E
F
H
G
J
K
X
M
N
P
Q
S
T
D
O
$R_1 - N_1^{\frac{1}{4}} = 0.00000$
$R_2 - N_1^{\frac{1}{2}} = 0.00000$
$R_3 - N_1^2 = 0.00000$
$R_4 - N_1^4 = 0.00000$
$R_5 - N_1^8 = 0.00000$

090912-9

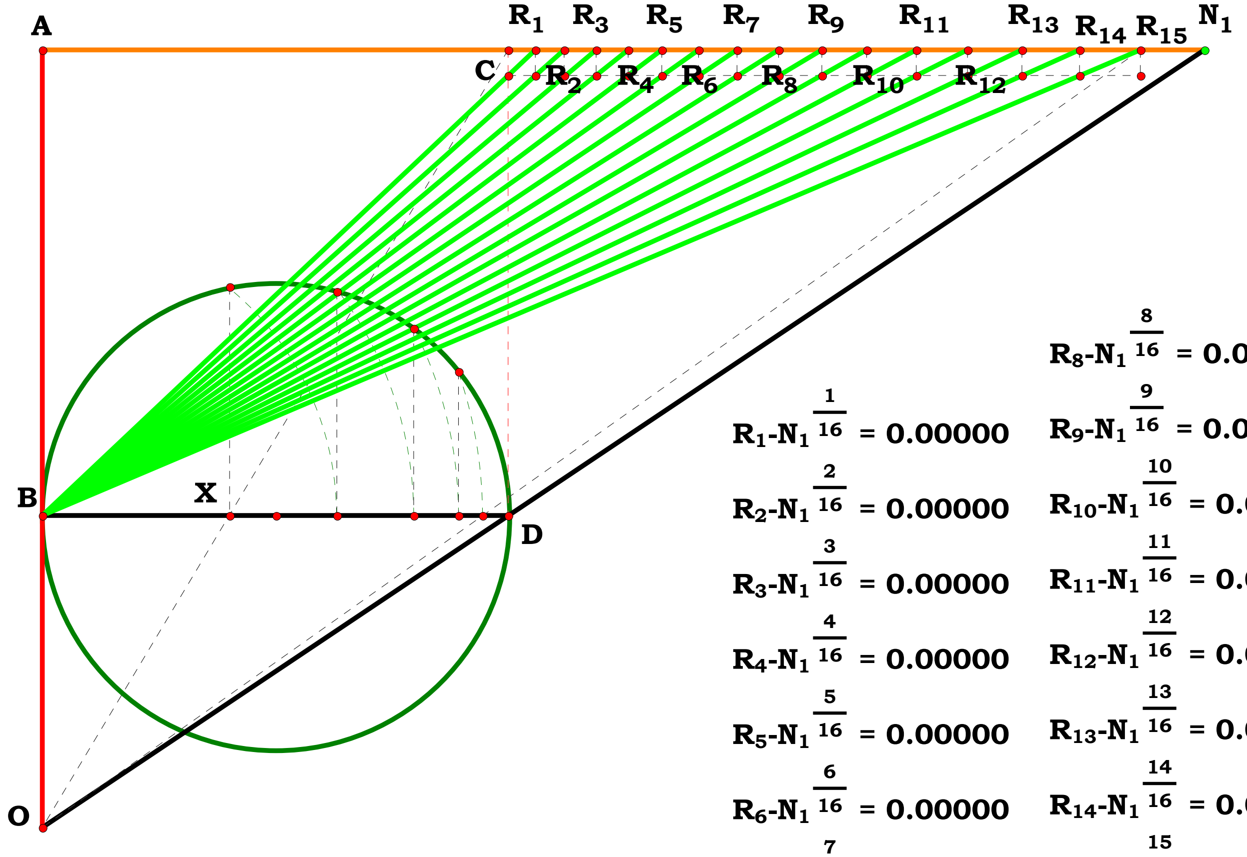
One might add this method for finding exponential series to their bag of tricks. I am not going to demonstrate the mathematics. One might refer to The Delian Quest.



$N_1 = 2.49232$
$A = 1.57871$
$B = 1.98360$
$C = 2.22346$
$D = 2.35405$

$N_1^{\frac{1}{2}} - A = 0.00000$
$N_1^{\frac{3}{4}} - B = 0.00000$
$N_1^{\frac{7}{8}} - C = 0.00000$
$N_1^{\frac{15}{16}} - D = 0.00000$

$N_1 = 2.49232$
$R_1 = 1.05874$
$R_2 = 1.12092$
$R_3 = 1.18676$
$R_4 = 1.25647$
$R_5 = 1.33027$
$R_6 = 1.40840$
$R_7 = 1.49113$
$R_8 = 1.57871$
$R_9 = 1.67144$
$R_{10} = 1.76961$
$R_{11} = 1.87355$
$R_{12} = 1.98360$
$R_{13} = 2.10010$
$R_{14} = 2.22346$
$R_{15} = 2.35405$

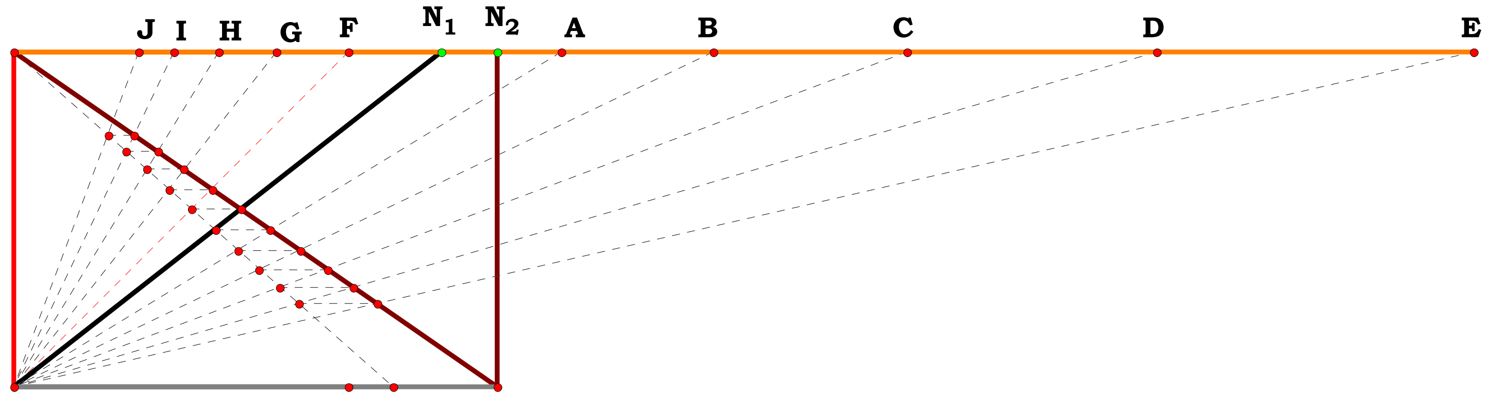


$R_1 - N_1^{\frac{1}{16}} = 0.00000$
$R_2 - N_1^{\frac{2}{16}} = 0.00000$
$R_3 - N_1^{\frac{3}{16}} = 0.00000$
$R_4 - N_1^{\frac{4}{16}} = 0.00000$
$R_5 - N_1^{\frac{5}{16}} = 0.00000$
$R_6 - N_1^{\frac{6}{16}} = 0.00000$
$R_7 - N_1^{\frac{7}{16}} = 0.00000$
$R_8 - N_1^{\frac{8}{16}} = 0.00000$
$R_9 - N_1^{\frac{9}{16}} = 0.00000$
$R_{10} - N_1^{\frac{10}{16}} = 0.00000$
$R_{11} - N_1^{\frac{11}{16}} = 0.00000$
$R_{12} - N_1^{\frac{12}{16}} = 0.00000$
$R_{13} - N_1^{\frac{13}{16}} = 0.00000$
$R_{14} - N_1^{\frac{14}{16}} = 0.00000$
$R_{15} - N_1^{\frac{15}{16}} = 0.00000$

091712

About the only thing interesting about this plate is that the second variable will not be found in the equation. No matter how large or how small one makes it, it will remain invisible to the logic except for one point, it has to be there. In short, its value is of no concern, its form, however, is required. Therefore, there are equations, which, a value is not seen, nor does one find its name, however, without being able to conceptually abstract it, one cannot solve for what they do have. The figure gives one something to think about in regard to conceptual ability. To solve a problem when one is dealing with a form of behavior one has to infer. I exampled a figure with this fact in the Delian Quest. The structure had to be there, but it neither added to, nor subtracted from the equation, they are binary operations.

Or, one can say, that in doing the math, the unit, or one always has to be kept in mind.



$N_1 = 1.27809$
$N_2 = 1.44523$

A = 1.63353
B = 2.08780
C = 2.66841
D = 3.41048
E = 4.35891

F = 1.00000
G = 0.78241
H = 0.61217
I = 0.47897
J = 0.37476

$N_1^2 - A = 0.00000$
$N_1^3 - B = 0.00000$
$N_1^4 - C = 0.00000$
$N_1^5 - D = 0.00000$
$N_1^6 - E = 0.00000$

$N_1^0 - F = 0.00000$
$N_1^{-1} - G = 0.00000$
$N_1^{-2} - H = 0.00000$
$N_1^{-3} - I = 0.00000$
$N_1^{-4} - J = 0.00000$

930725

$AB := 1$

$N_1 := 4.05604$

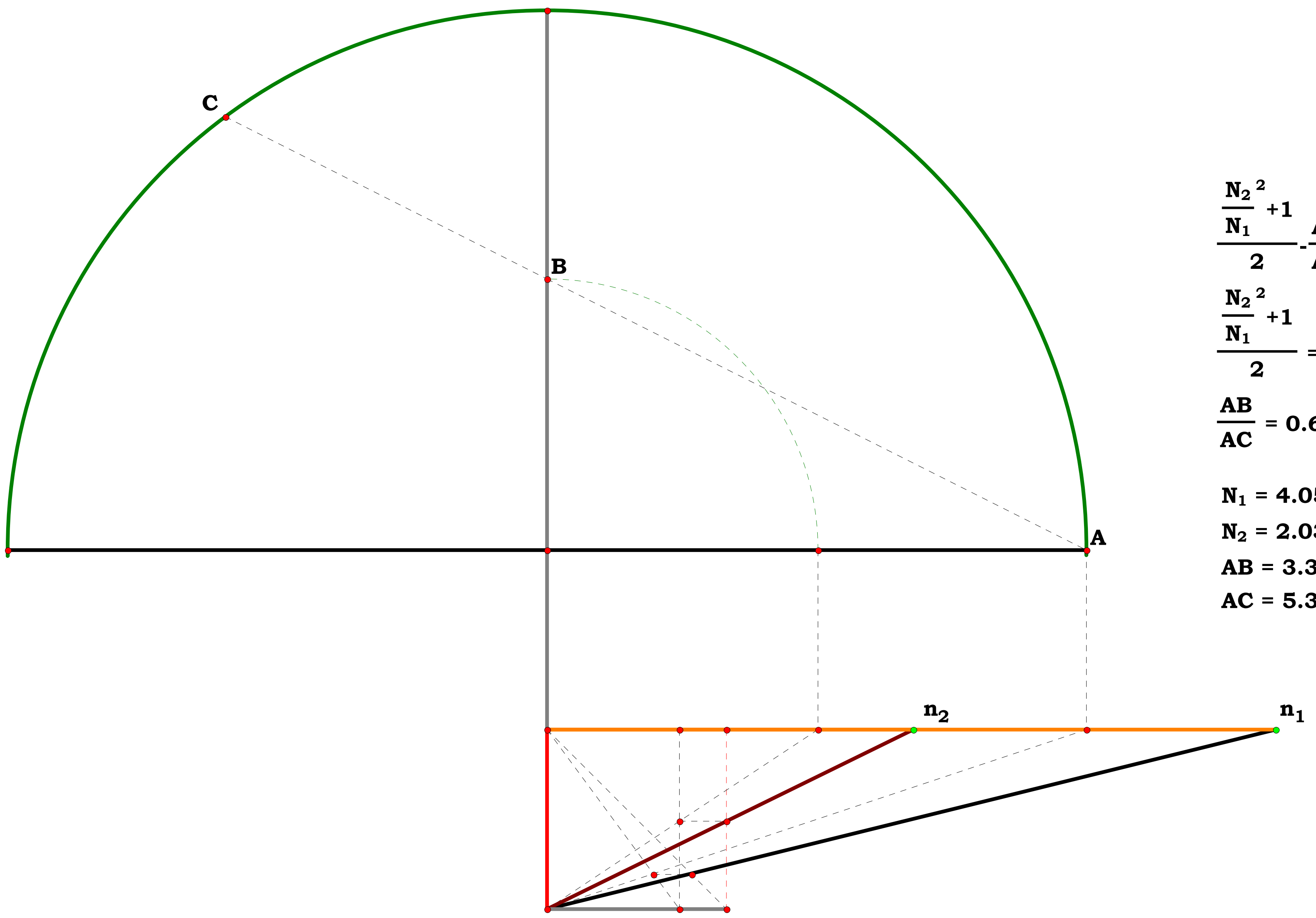
$N_2 := 2.03783$

$$\frac{\left(\frac{N_2}{N_1}\right)^2 + 1}{2} = 0.626212$$

$$\frac{N_1{}^2 + N_2{}^2}{2 \cdot N_1{}^2} = 0.626212$$

$$\frac{N_2{}^2}{2 \cdot N_1{}^2} + \frac{1}{2} = 0.626212$$

$$\frac{1}{2} \cdot \left(\frac{N_2}{N_1}\right)^2 + \frac{1}{2} = 0.626212$$



$$\frac{\frac{N_2{}^2}{N_1}+1}{2} - \frac{AB}{AC} = 0.00000$$

$$\frac{\frac{N_2{}^2}{N_1}+1}{2} = 0.62621$$

$$\frac{AB}{AC} = 0.62621$$

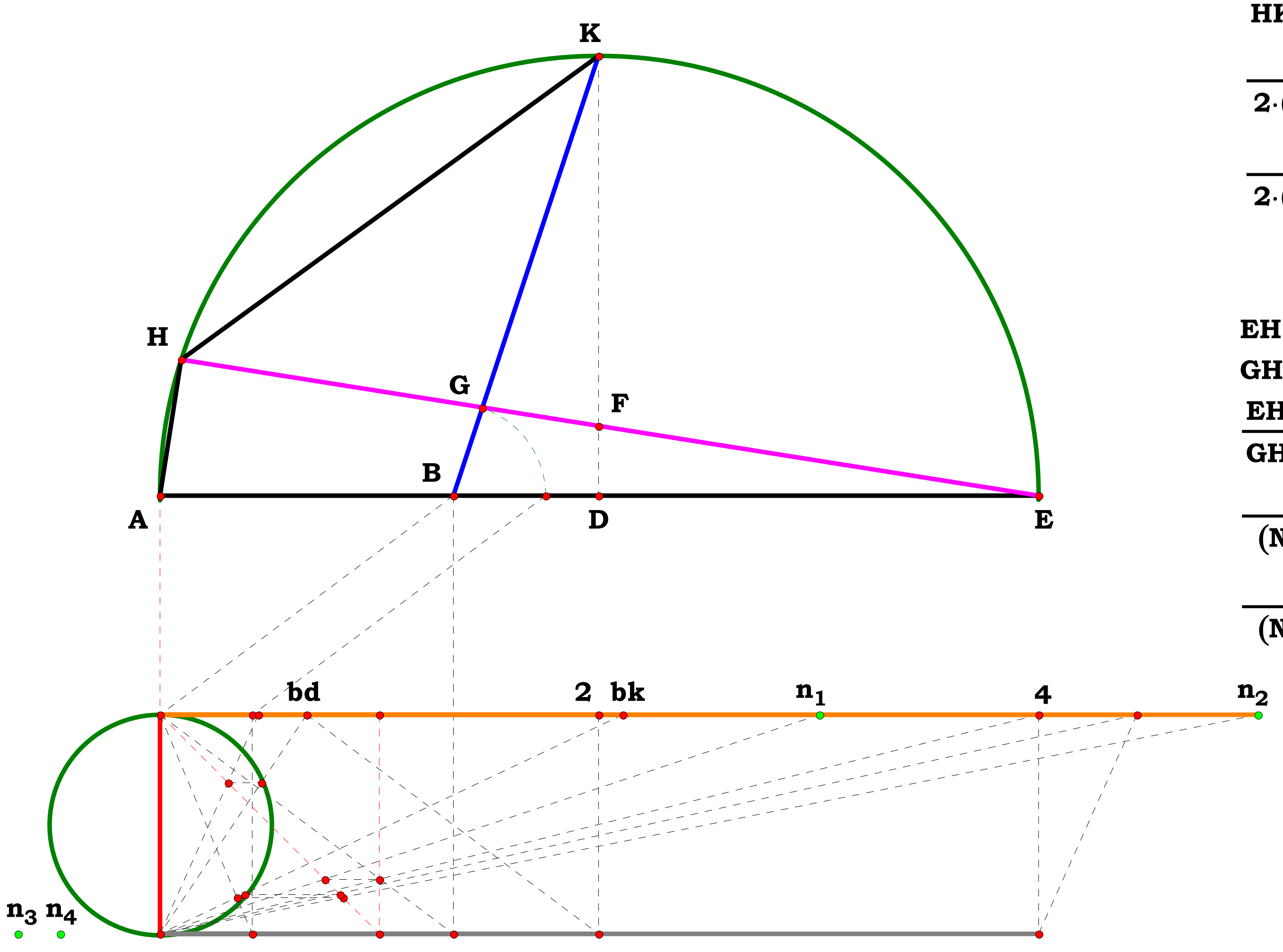
$N_1 = 4.05604$

$N_2 = 2.03783$

$AB = 3.35735$

$AC = 5.36137$

931124



$HK = 2.35269$

$$\frac{AH}{HK} = 0.26517$$

$$\frac{\sqrt{2}\cdot N_1}{2\cdot(N_1-1)\cdot(N_2-1)} = 0.26517$$

$$\frac{\sqrt{2}\cdot N_1}{2\cdot(N_1-1)\cdot(N_2-1)} - \frac{AH}{HK} = 0.00000$$

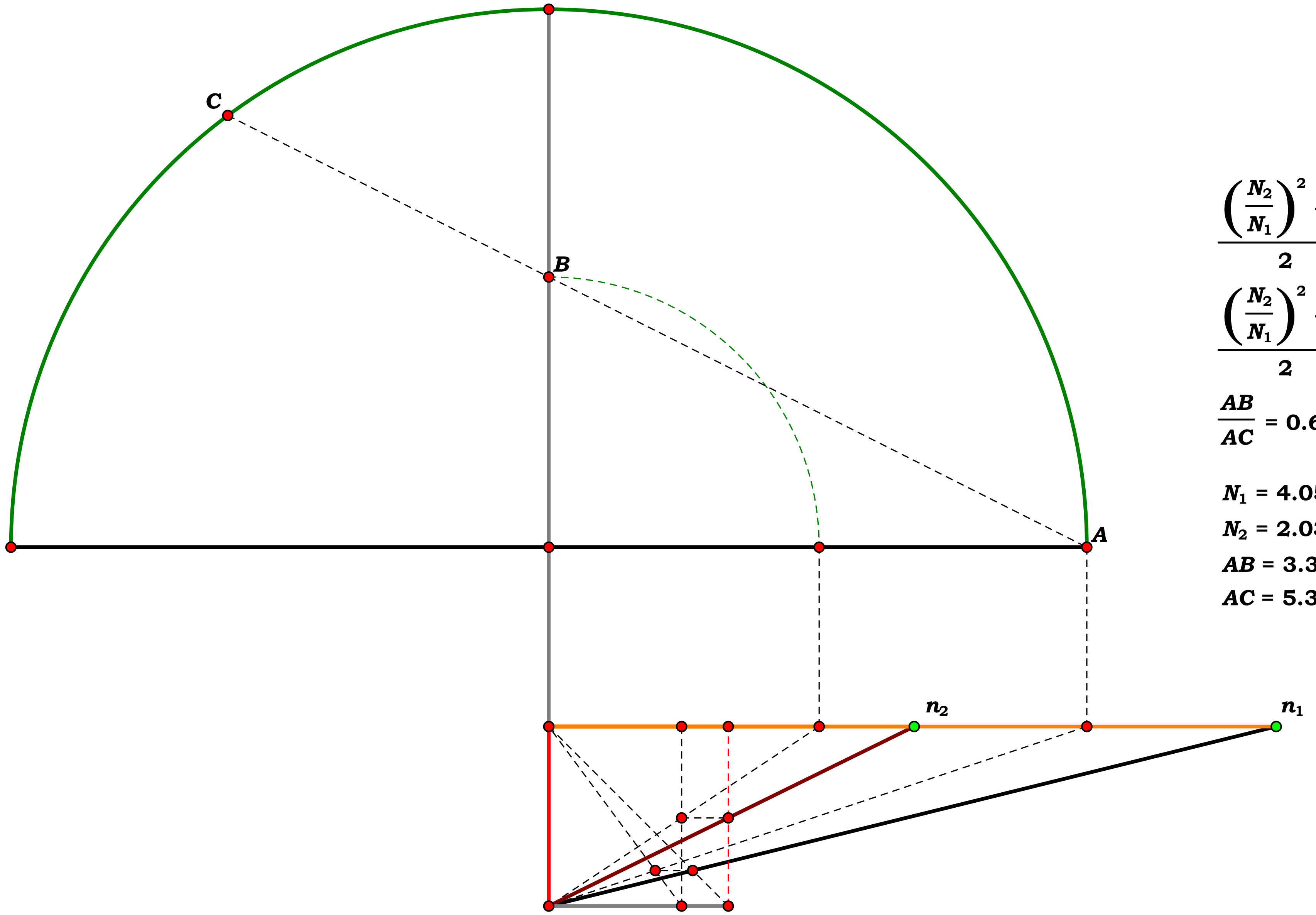
$EH = 3.95105$

$GH = 1.38633$

$$\frac{EH}{GH} = 2.85000$$

$$\frac{N_1\cdot N_2\cdot((2\cdot N_1\cdot N_2-2\cdot N_2-N_1)+2)}{(N_2-1)\cdot((((2\cdot N_1\cdot N_2-2\cdot N_2)+N_1^2)-2\cdot N_1)+2)} = 2.85000$$

$$\frac{N_1\cdot N_2\cdot((2\cdot N_1\cdot N_2-2\cdot N_2-N_1)+2)}{(N_2-1)\cdot((((2\cdot N_1\cdot N_2-2\cdot N_2)+N_1^2)-2\cdot N_1)+2)} - \frac{EH}{GH} = 0.00000$$



$$\frac{\left(\frac{N_2}{N_1}\right)^2 + 1}{2} - \frac{AB}{AC} = 0.00000$$

$$\frac{\left(\frac{N_2}{N_1}\right)^2 + 1}{2} = 0.62621$$

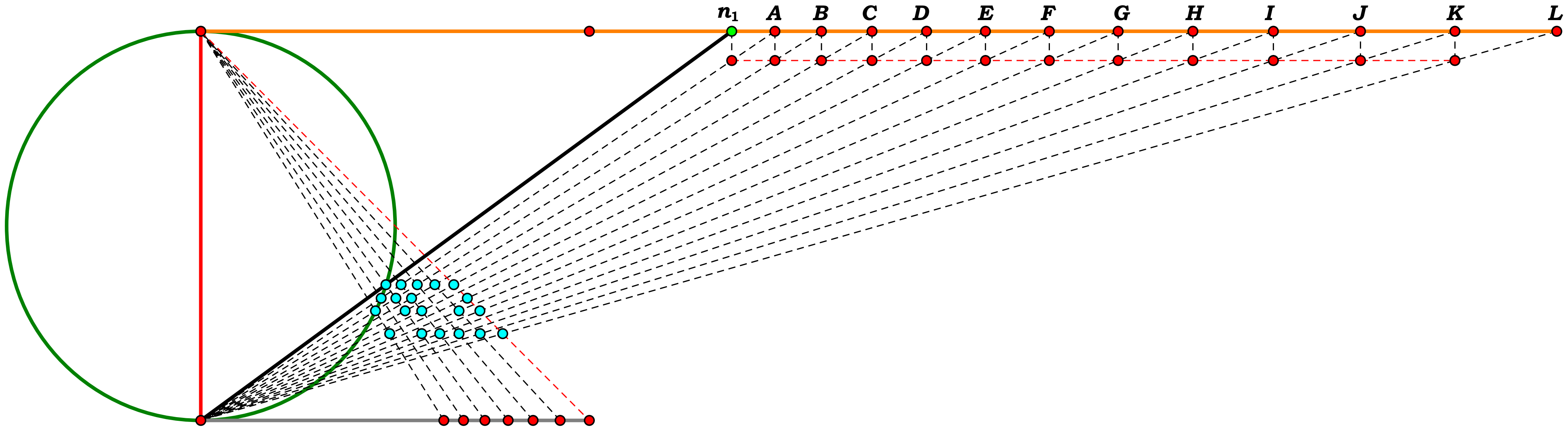
$$\frac{AB}{AC} = 0.62621$$

$N_1 = 4.05604$

$N_2 = 2.03783$

$AB = 3.35735$

$AC = 5.36137$



$N_1 = 1.36693$

$A = 1.47803$
$B = 1.59816$
$C = 1.72805$
$D = 1.86850$

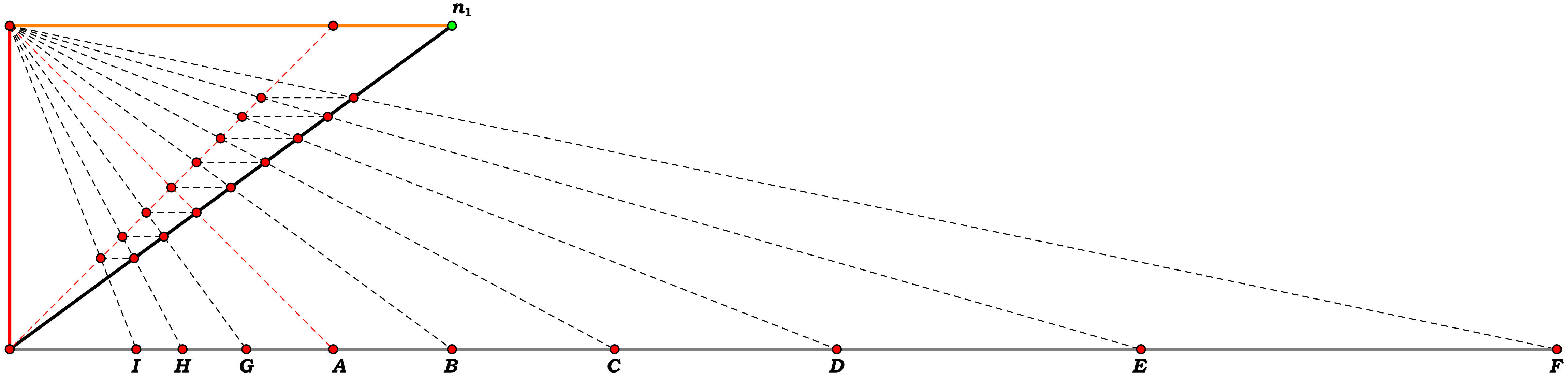
$E = 2.02036$
$F = 2.18457$
$G = 2.36212$
$H = 2.55410$

$I = 2.76169$
$J = 2.98615$
$K = 3.22885$
$L = 3.49128$

$N_1^{1.25} - A = 0.00000$
$N_1^{1.5} - B = 0.00000$
$N_1^{1.75} - C = 0.00000$
$N_1^{2} - D = 0.00000$

$N_1^{2.25} - E = 0.00000$
$N_1^{2.5} - F = 0.00000$
$N_1^{2.75} - G = 0.00000$
$N_1^{3} - H = 0.00000$

$N_1^{3.25} - I = 0.00000$
$N_1^{3.5} - J = 0.00000$
$N_1^{3.75} - K = 0.00000$
$N_1^{4} - L = 0.00000$



$N_1 = 1.36763$

$A = 1.00000$
$B = 1.36763$
$C = 1.87042$
$D = 2.55805$

$E = 3.49847$
$F = 4.78462$
$G = 0.73119$
$H = 0.53464$
$I = 0.39092$

$N_1^0 - A = 0.00000$
$N_1^1 - B = 0.00000$
$N_1^2 - C = 0.00000$
$N_1^3 - D = 0.00000$

$N_1^4 - E = 0.00000$
$N_1^5 - F = 0.00000$
$N_1^{-1} - G = 0.00000$
$N_1^{-2} - H = 0.00000$
$N_1^{-3} - I = 0.00000$

$N_1 = 2.10483$

$N_2 = 2.59960$

$x_A = 2.10483$

$x_B = 2.59960$

$x_C = 3.21068$

$x_D = 3.96539$

$x_E = 4.89752$

$x_F = 1.70423$

$x_G = 1.37987$

$x_H = 1.11724$

$x_I = 0.90460$

$$\frac{N_2^{\,0}}{N_1^{\,-1}} = 2.10483$$

$$\frac{N_2^{\,1}}{N_1^{\,0}} = 2.59960$$

$$\frac{N_2^{\,2}}{N_1^{\,1}} = 3.21068$$

$$\frac{N_2^{\,3}}{N_1^{\,2}} = 3.96539$$

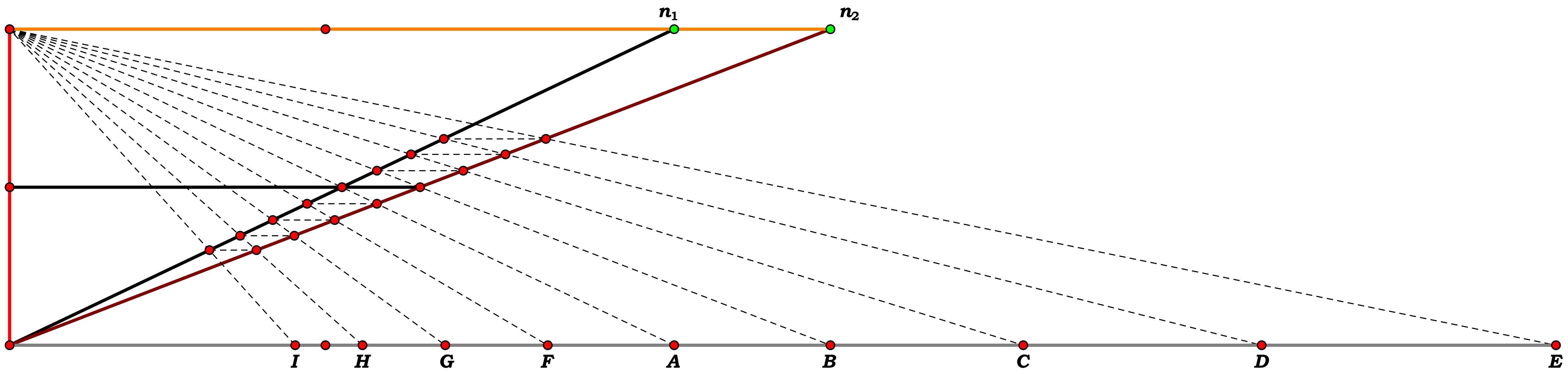
$$\frac{N_2^{\,4}}{N_1^{\,3}} = 4.89752$$

$$\frac{N_2^{\,-1}}{N_1^{\,-2}} = 1.70423$$

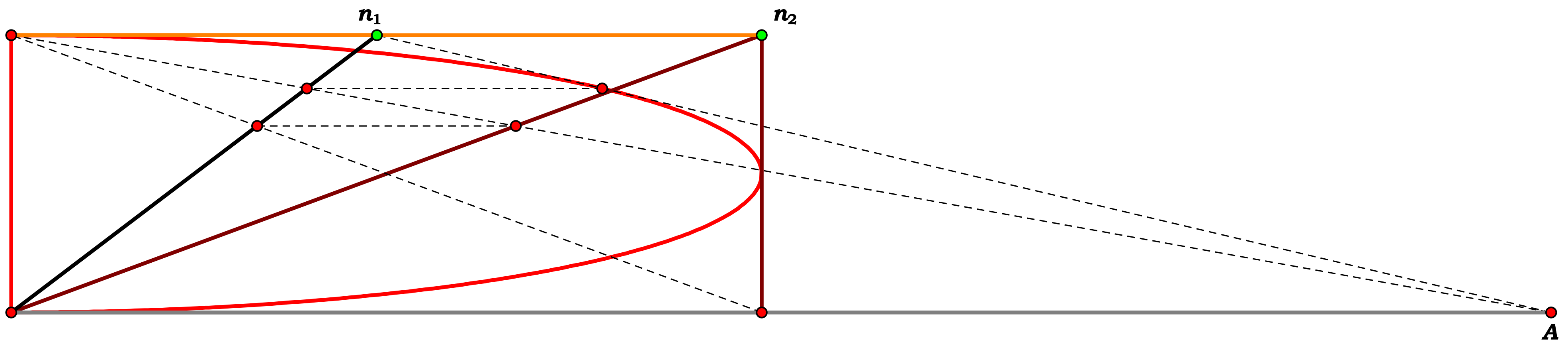
$$\frac{N_2^{\,-2}}{N_1^{\,-3}} = 1.37987$$

$$\frac{N_2^{\,-3}}{N_1^{\,-4}} = 1.11724$$

$$\frac{N_2^{\,-4}}{N_1^{\,-5}} = 0.90460$$



From any point n_1 draw the tangent to the ellipse n_2. Or given the square n_2 divide it by n_1.



$N_1 = 1.32088$ $A = 5.56312$

$N_2 = 2.71076$ $\frac{N_2^2}{N_1} - A = 0.00000$

$A^2 - B = 0.00000$
$(A \cdot B) - C = 0.00000$
$B^2 - D = 0.00000$
$(B \cdot C) - E = 0.00000$

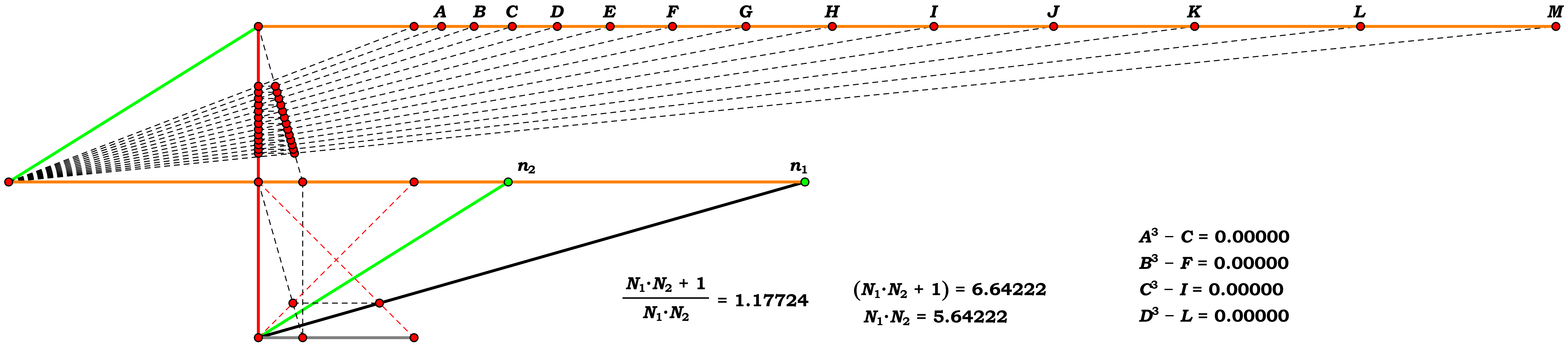
$C^2 - F = 0.00000$
$(C \cdot D) - G = 0.00000$
$D^2 - H = 0.00000$
$(D \cdot E) - I = 0.00000$

$E^2 - J = 0.00000$
$(E \cdot F) - K = 0.00000$
$F^2 - L = 0.00000$
$(F \cdot G) - M = 0.00000$

$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{1} - A = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{2} - B = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{3} - C = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{4} - D = 0.00000$$

$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{5} - E = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{6} - F = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{7} - G = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{8} - H = 0.00000$$

$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{9} - I = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{10} - J = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{11} - K = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{12} - L = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{13} - M = 0.00000$$



$$\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2} = 1.17724$$

$(N_1 \cdot N_2 + 1) = 6.64222$
$N_1 \cdot N_2 = 5.64222$

$A^3 - C = 0.00000$
$B^3 - F = 0.00000$
$C^3 - I = 0.00000$
$D^3 - L = 0.00000$

$N_1 = 3.51340$
$N_2 = 1.60591$

$A = 1.17724$
$B = 1.38588$
$C = 1.63151$
$D = 1.92067$
$E = 2.26108$

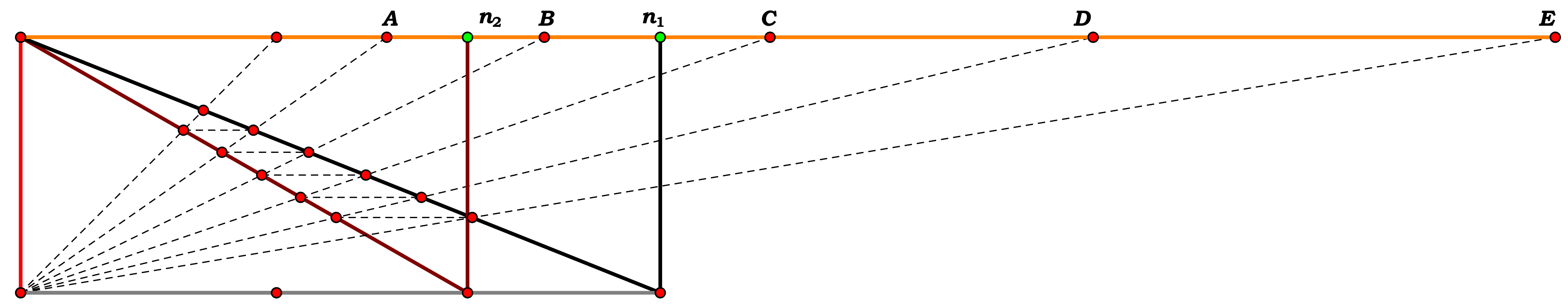
$F = 2.66183$
$G = 3.13360$
$H = 3.68898$
$I = 4.34280$

$J = 5.11249$
$K = 6.01861$
$L = 7.08532$
$M = 8.34108$

$A^2 = 1.38588$
$A \cdot B = 1.63151$
$B^2 = 1.92067$
$B \cdot C = 2.26108$

$C^2 = 2.66183$
$C \cdot D = 3.13360$
$D^2 = 3.68898$
$D \cdot E = 4.34280$

$E^2 = 5.11249$
$E \cdot F = 6.01861$
$F^2 = 7.08532$
$F \cdot G = 8.34108$



$A = 1.43109$

$B = 2.04801$

$C = 2.93088$

$D = 4.19435$

$E = 6.00248$

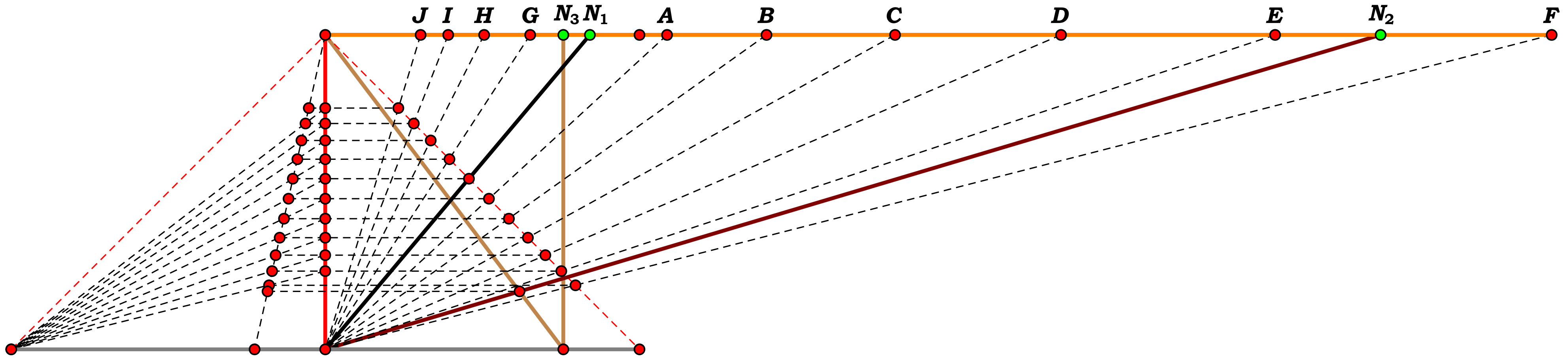
$$\frac{N_1}{N_2} - A = 0.00000$$

$$\left(\frac{N_1}{N_2}\right)^2 - B = 0.00000$$

$$\left(\frac{N_1}{N_2}\right)^3 - C = 0.00000$$

$$\left(\frac{N_1}{N_2}\right)^4 - D = 0.00000$$

$$\left(\frac{N_1}{N_2}\right)^5 - E = 0.00000$$



$$\left(\frac{N_1^{\frac{1}{4}} \cdot N_2}{N_2 - N_3}\right)^4 - D = 0.00000$$

$$\frac{N_1 \cdot N_2^4}{(N_2 - N_3)^4} - D = 0.00000$$

$$\frac{N_2}{N_2 - N_3} = 1.29123$$

$N_1 = 0.84255$
$N_2 = 3.35986$
$N_3 = 0.75780$

$A = 1.08792$
$B = 1.40476$
$C = 1.81388$
$D = 2.34214$
$E = 3.02425$
$F = 3.90501$

$G = 0.65251$
$H = 0.50534$
$I = 0.39136$
$J = 0.30309$

$$\left(\frac{N_2}{N_2 - N_3}\right)^1 \cdot N_1 - A = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^2 \cdot N_1 - B = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^3 \cdot N_1 - C = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^4 \cdot N_1 - D = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^5 \cdot N_1 - E = 0.00000$$

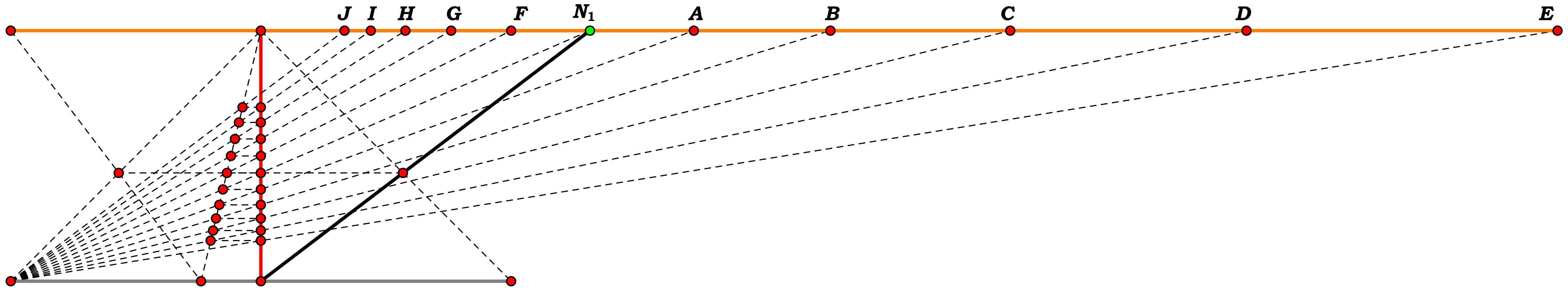
$$\left(\frac{N_2}{N_2 - N_3}\right)^6 \cdot N_1 - F = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^{-1} \cdot N_1 - G = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^{-2} \cdot N_1 - H = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^{-3} \cdot N_1 - I = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^{-4} \cdot N_1 - J = 0.00000$$



$N_1 = 1.31554$

$A = 1.73065$

$B = 2.27675$

$C = 2.99516$

$D = 3.94026$

$E = 5.18358$

$F = 1.00000$

$G = 0.76014$

$H = 0.57782$

$I = 0.43922$

$J = 0.33387$

$N_1^2 - A = 0.00000$

$N_1^3 - B = 0.00000$

$N_1^4 - C = 0.00000$

$N_1^5 - D = 0.00000$

$N_1^6 - E = 0.00000$

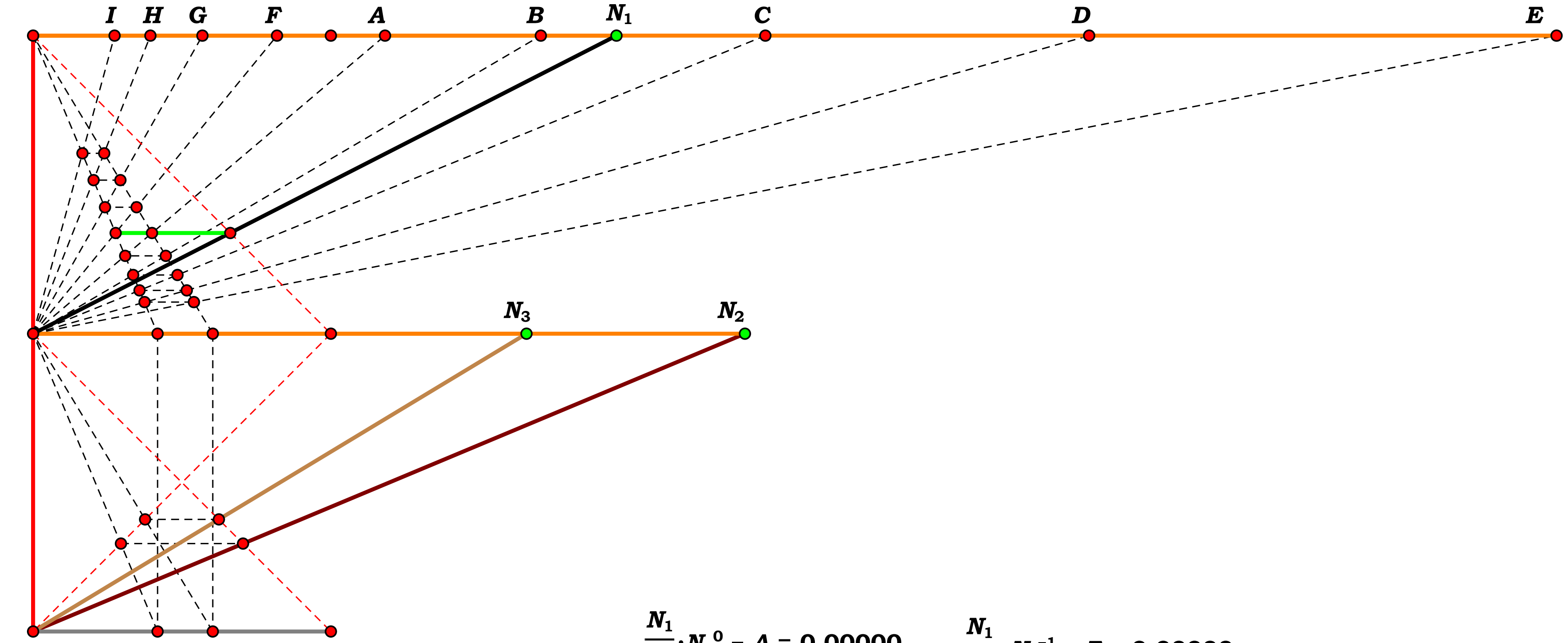
$N_1^0 - F = 0.00000$

$N_1^{-1} - G = 0.00000$

$N_1^{-2} - H = 0.00000$

$N_1^{-3} - I = 0.00000$

$N_1^{-4} - J = 0.00000$



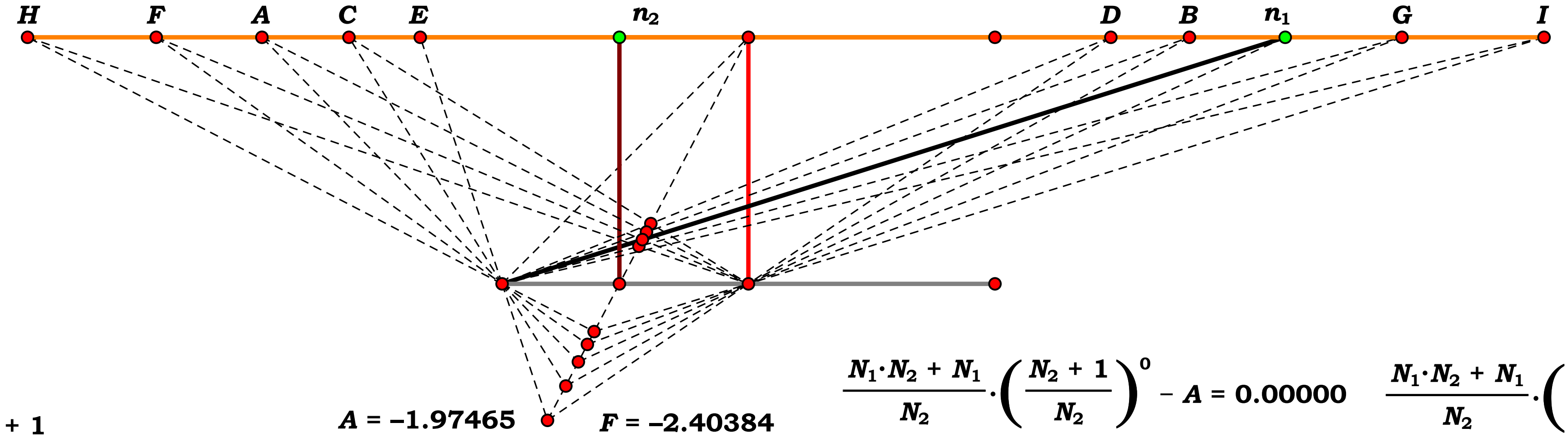
N_1 = 1.95987
N_2 = 2.39124
N_3 = 1.65771

A = 1.18227
B = 1.70541
C = 2.46005
D = 3.54859
E = 5.11881

F = 0.81960
G = 0.56819
H = 0.39389
I = 0.27306

$$\frac{N_1}{N_3}\cdot N_2^0 - A = 0.00000$$
$$\frac{N_1}{N_3^2}\cdot N_2 - B = 0.00000$$
$$\frac{N_1}{N_3^3}\cdot N_2^2 - C = 0.00000$$
$$\frac{N_1}{N_3^4}\cdot N_2^3 - D = 0.00000$$
$$\frac{N_1}{N_3^5}\cdot N_2^4 - E = 0.00000$$

$$\frac{N_1}{N_3^0}\cdot N_2^{-1} - F = 0.00000$$
$$\frac{N_1}{N_3^{-1}}\cdot N_2^{-2} - G = 0.00000$$
$$\frac{N_1}{N_3^{-2}}\cdot N_2^{-3} - H = 0.00000$$
$$\frac{N_1}{N_3^{-3}}\cdot N_2^{-4} - I = 0.00000$$



$$\frac{N_2 + 1}{N_2} = -0.90634$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} = -1.97465$$

$N_1 = 2.17870$
$N_2 = -0.52456$

$A = -1.97465$
$B = 1.78970$
$C = -1.62208$
$D = 1.47016$
$E = -1.33247$

$F = -2.40384$
$G = 2.65225$
$H = -2.92632$
$I = 3.22872$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{0} - A = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{1} - B = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{2} - C = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{3} - D = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{4} - E = 0.00000$$

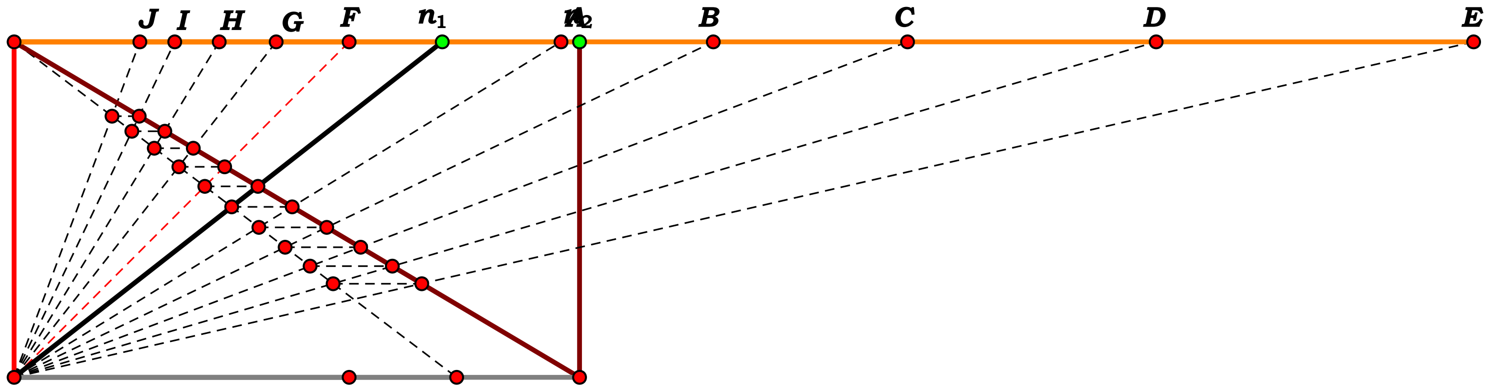
$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-1} - N_1 = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-2} - F = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-3} - G = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-4} - H = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-5} - I = 0.00000$$



$N_1 = 1.27809$

$N_2 = 1.68896$

$A = 1.63353$

$B = 2.08780$

$C = 2.66841$

$D = 3.41048$

$E = 4.35891$

$F = 1.00000$

$G = 0.78241$

$H = 0.61217$

$I = 0.47897$

$J = 0.37476$

$N_1^2 - A = 0.00000$

$N_1^3 - B = 0.00000$

$N_1^4 - C = 0.00000$

$N_1^5 - D = 0.00000$

$N_1^6 - E = 0.00000$

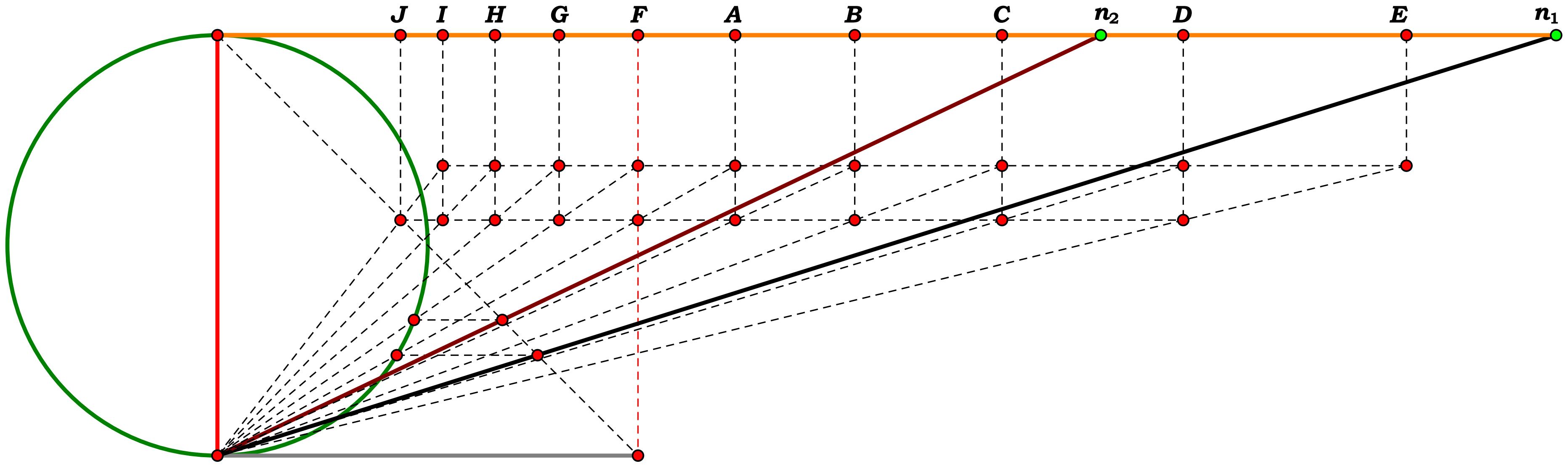
$N_1^0 - F = 0.00000$

$N_1^{-1} - G = 0.00000$

$N_1^{-2} - H = 0.00000$

$N_1^{-3} - I = 0.00000$

$N_1^{-4} - J = 0.00000$



$\frac{\sqrt{N_1}}{\sqrt{N_2}} = 1.23112$

$N_1 = 3.18458$

$N_2 = 2.10112$

$A = 1.23112$

$B = 1.51566$

$C = 1.86597$

$D = 2.29723$

$E = 2.82817$

$F = 1.00000$

$G = 0.81227$

$H = 0.65978$

$I = 0.53592$

$J = 0.43531$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{1} - A = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{2} - B = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{3} - C = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{4} - D = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{5} - E = 0.00000$

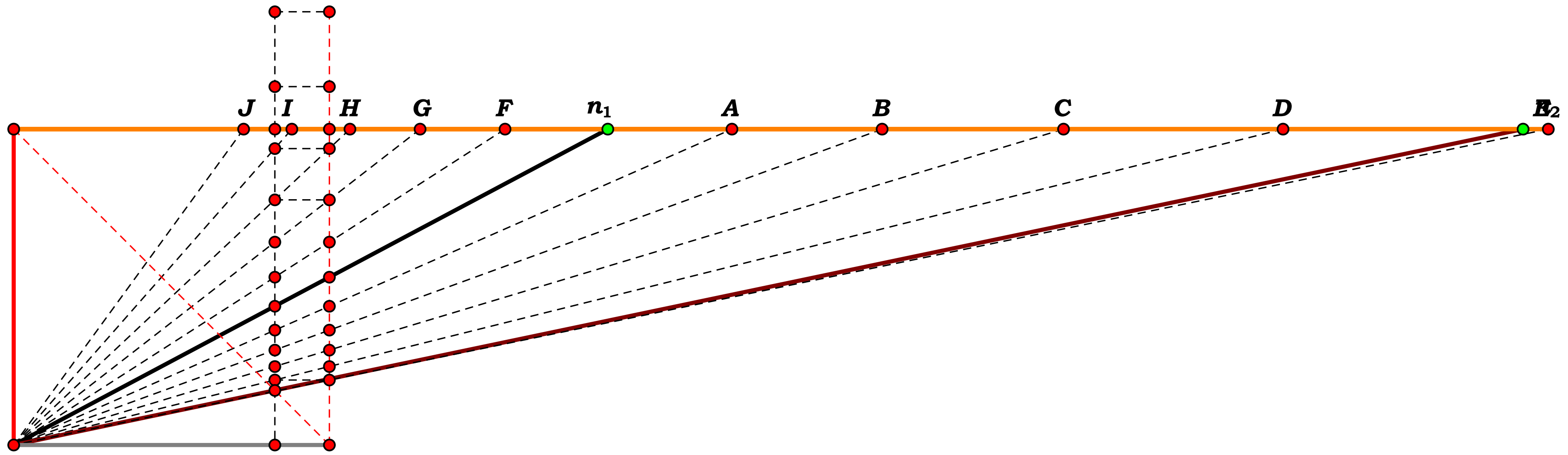
$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{0} - F = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{-1} - G = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{-2} - H = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{-3} - I = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{-4} - J = 0.00000$



$$\frac{N_1 \cdot N_2 + N_1}{N_2} = 2.27629$$

$$\frac{N_2 + 1}{N_2} = 1.20903$$

$N_1 = 1.88273$
$N_2 = 4.78390$

$A = 2.27629$
$B = 2.75211$
$C = 3.32740$
$D = 4.02294$
$E = 4.86387$

$F = 1.55722$
$G = 1.28799$
$H = 1.06530$
$I = 0.88112$
$J = 0.72878$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{0} - A = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{1} - B = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{2} - C = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{3} - D = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{4} - E = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-1} - N_1 = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-2} - F = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-3} - G = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-4} - H = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-5} - I = 0.00000$$

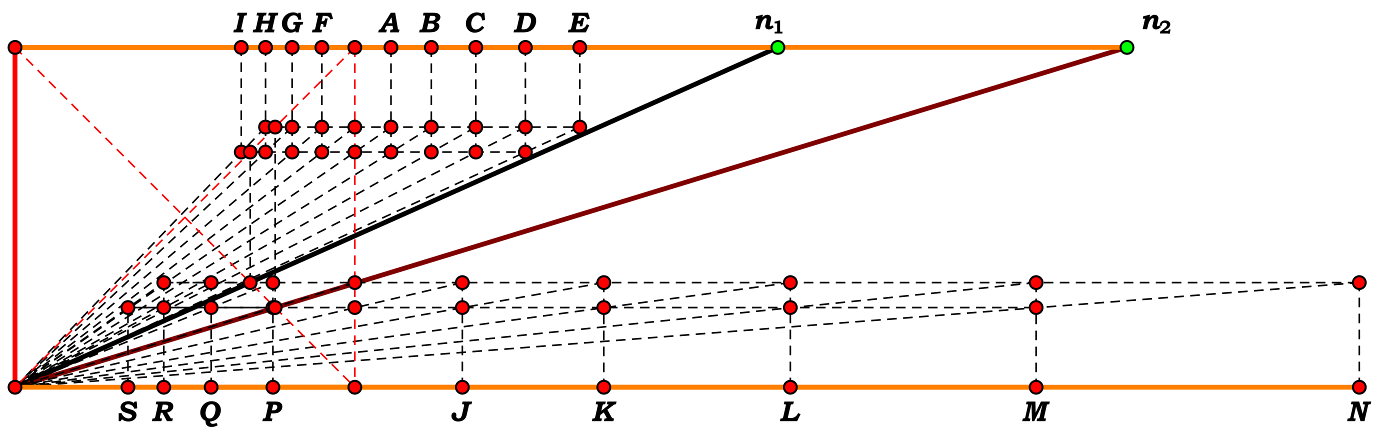
$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-6} - J = 0.00000$$

$$\frac{N_2\cdot(N_1 + 1)}{N_1\cdot(N_2 + 1)} = 1.10710$$

$A = 1.10710$
$B = 1.22567$
$C = 1.35694$
$D = 1.50227$
$E = 1.66316$
$F = 0.90326$
$G = 0.81588$
$H = 0.73695$
$I = 0.66566$

$$\left(\frac{N_2\cdot(N_1 + 1)}{N_1\cdot(N_2 + 1)}\right)^1 - A = 0.00000$$
$$\left(\frac{N_2\cdot(N_1 + 1)}{N_1\cdot(N_2 + 1)}\right)^2 - B = 0.00000$$
$$\left(\frac{N_2\cdot(N_1 + 1)}{N_1\cdot(N_2 + 1)}\right)^3 - C = 0.00000$$
$$\left(\frac{N_2\cdot(N_1 + 1)}{N_1\cdot(N_2 + 1)}\right)^4 - D = 0.00000$$
$$\left(\frac{N_2\cdot(N_1 + 1)}{N_1\cdot(N_2 + 1)}\right)^5 - E = 0.00000$$

$$\left(\frac{N_2\cdot(N_1 + 1)}{N_1\cdot(N_2 + 1)}\right)^{-1} - F = 0.00000$$
$$\left(\frac{N_2\cdot(N_1 + 1)}{N_1\cdot(N_2 + 1)}\right)^{-2} - G = 0.00000$$
$$\left(\frac{N_2\cdot(N_1 + 1)}{N_1\cdot(N_2 + 1)}\right)^{-3} - H = 0.00000$$
$$\left(\frac{N_2\cdot(N_1 + 1)}{N_1\cdot(N_2 + 1)}\right)^{-4} - I = 0.00000$$



$$\frac{N_2 + 1}{N_1 + 1} = 1.31677$$

$N_1 = 2.24615$
$N_2 = 3.27442$

$J = 1.31677$
$K = 1.73387$
$L = 2.28310$
$M = 3.00631$
$N = 3.95861$

$P = 0.75944$
$Q = 0.57674$
$R = 0.43800$
$S = 0.33263$

$$\left(\frac{N_2 + 1}{N_1 + 1}\right)^1 - J = 0.00000$$
$$\left(\frac{N_2 + 1}{N_1 + 1}\right)^2 - K = 0.00000$$
$$\left(\frac{N_2 + 1}{N_1 + 1}\right)^3 - L = 0.00000$$
$$\left(\frac{N_2 + 1}{N_1 + 1}\right)^4 - M = 0.00000$$
$$\left(\frac{N_2 + 1}{N_1 + 1}\right)^5 - N = 0.00000$$

$$\left(\frac{N_2 + 1}{N_1 + 1}\right)^{-1} - P = 0.00000$$
$$\left(\frac{N_2 + 1}{N_1 + 1}\right)^{-2} - Q = 0.00000$$
$$\left(\frac{N_2 + 1}{N_1 + 1}\right)^{-3} - R = 0.00000$$
$$\left(\frac{N_2 + 1}{N_1 + 1}\right)^{-4} - S = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2} = 0.83725$$

$$\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1} = 1.12397$$

$A = 0.83725$
$B = 0.94105$
$C = 1.05771$
$D = 1.18884$
$E = 1.33622$

$F = 0.74490$
$G = 0.66274$
$H = 0.58964$
$I = 0.52461$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^0 - A = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^1 - B = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^2 - C = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^3 - D = 0.00000$$

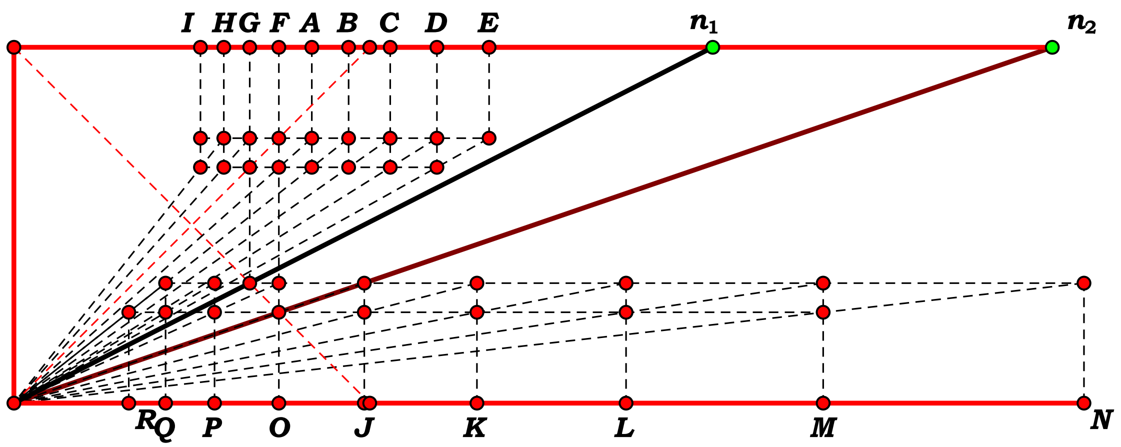
$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^4 - E = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^{-1} - F = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^{-2} - G = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^{-3} - H = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^{-4} - I = 0.00000$$



$$\frac{N_2}{N_1+1} = 0.98482$$

$$\frac{N_2+1}{N_1+1} = 1.32208$$

$N_1 = 1.96510$
$N_2 = 2.92011$

$J = 0.98482$
$K = 1.30202$
$L = 1.72138$
$M = 2.27580$
$N = 3.00879$

$O = 0.74490$
$P = 0.56343$
$Q = 0.42617$
$R = 0.32235$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^0 - J = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^1 - K = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^2 - L = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^3 - M = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^4 - N = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^{-1} - O = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^{-2} - P = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^{-3} - Q = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^{-4} - R = 0.00000$$

$B = 1.31080$
$C = 1.71820$
$D = 2.25222$
$E = 2.95221$
$F = 3.86977$
$G = 5.07250$

$$\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)} = 1.31080 \qquad \left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^1 - B = 0.00000$$

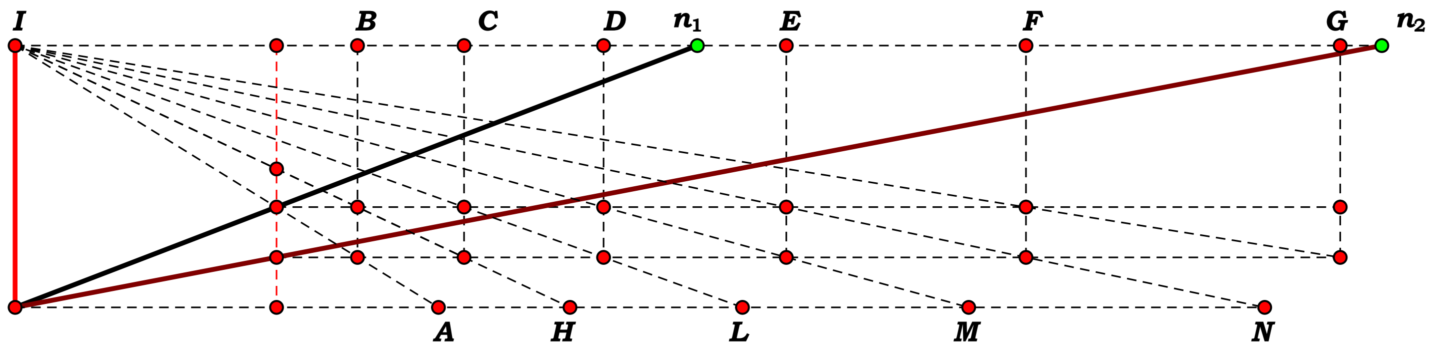
$$\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^2 = 1.71820 \qquad \left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^2 - C = 0.00000$$

$$\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^3 = 2.25222 \qquad \left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^3 - D = 0.00000$$

$$\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^4 = 2.95221 \qquad \left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^4 - E = 0.00000$$

$$\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^5 = 3.86977 \qquad \left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^5 - F = 0.00000$$

$$\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^6 = 5.07250 \qquad \left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^6 - G = 0.00000$$



$$\frac{N_1}{N_1-1} - A = 0.00000$$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2} = 2.12423$$

$N_1 = 2.61146$
$N_2 = 5.23175$

$A = 1.62056$
$H = 2.12423$
$L = 2.78444$
$M = 3.64985$
$N = 4.78423$

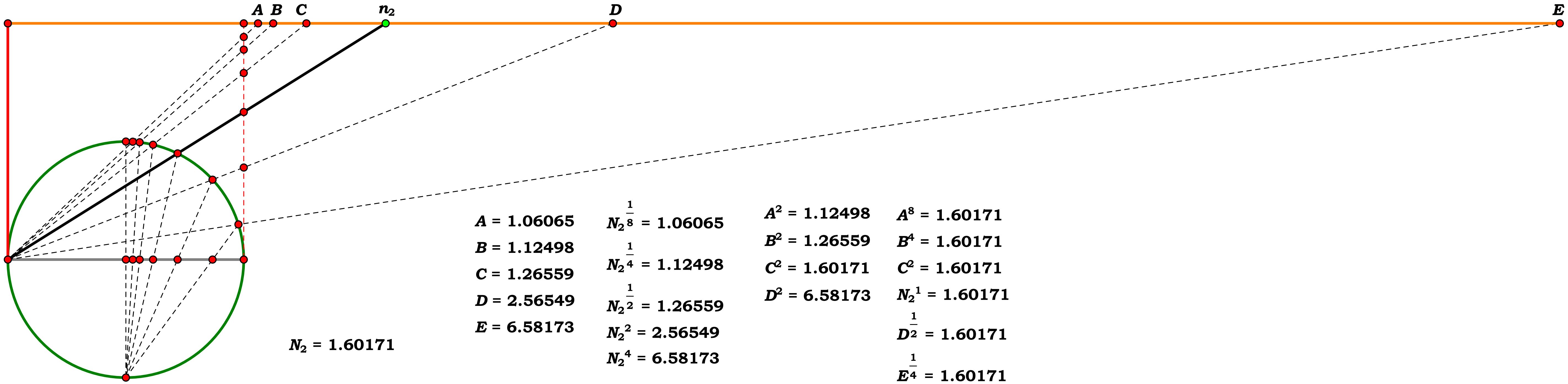
$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{-1} = 1.62056 \qquad \left(\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{-1}\right) - A = 0.00000$$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{0} = 2.12423 \qquad \left(\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{0}\right) - H = 0.00000$$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{1} = 2.78444 \qquad \left(\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{1}\right) - L = 0.00000$$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{2} = 3.64985 \qquad \left(\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{2}\right) - M = 0.00000$$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{3} = 4.78423 \qquad \left(\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{3}\right) - N = 0.00000$$



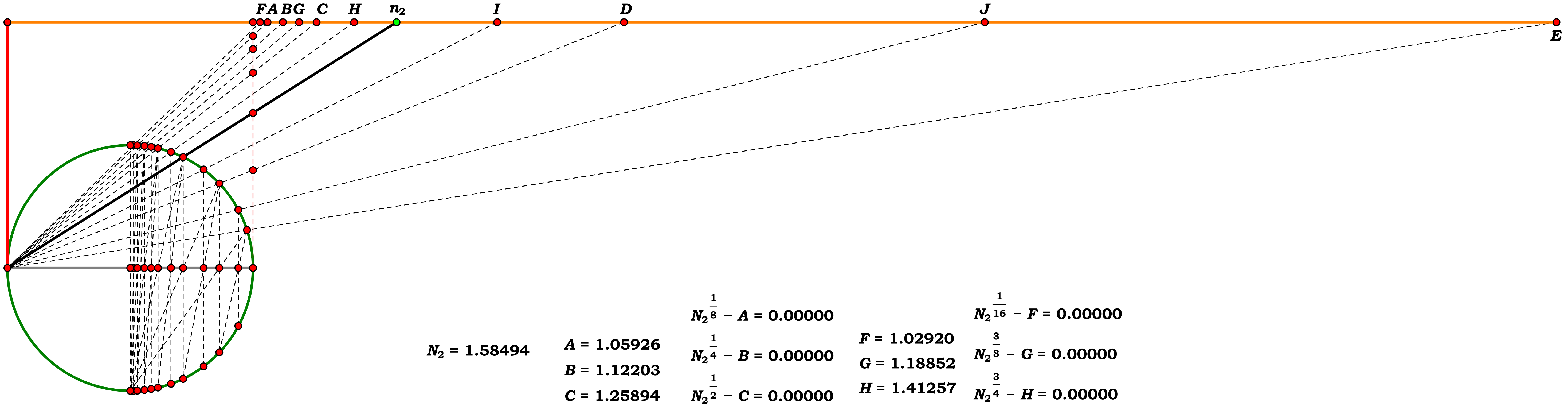
$N_2 = 1.60171$

$A = 1.06065$
$B = 1.12498$
$C = 1.26559$
$D = 2.56549$
$E = 6.58173$

$N_2^{\frac{1}{8}} = 1.06065$
$N_2^{\frac{1}{4}} = 1.12498$
$N_2^{\frac{1}{2}} = 1.26559$
$N_2^{2} = 2.56549$
$N_2^{4} = 6.58173$

$A^2 = 1.12498$
$B^2 = 1.26559$
$C^2 = 1.60171$
$D^2 = 6.58173$

$A^8 = 1.60171$
$B^4 = 1.60171$
$C^2 = 1.60171$
$N_2^{1} = 1.60171$
$D^{\frac{1}{2}} = 1.60171$
$E^{\frac{1}{4}} = 1.60171$



$N_2 = 1.58494$

$A = 1.05926$

$B = 1.12203$

$C = 1.25894$

$D = 2.51204$

$E = 6.31034$

$N_2^{\frac{1}{8}} - A = 0.00000$

$N_2^{\frac{1}{4}} - B = 0.00000$

$N_2^{\frac{1}{2}} - C = 0.00000$

$N_2^{2} - D = 0.00000$

$N_2^{4} - E = 0.00000$

$F = 1.02920$

$G = 1.18852$

$H = 1.41257$

$I = 1.99535$

$J = 3.98144$

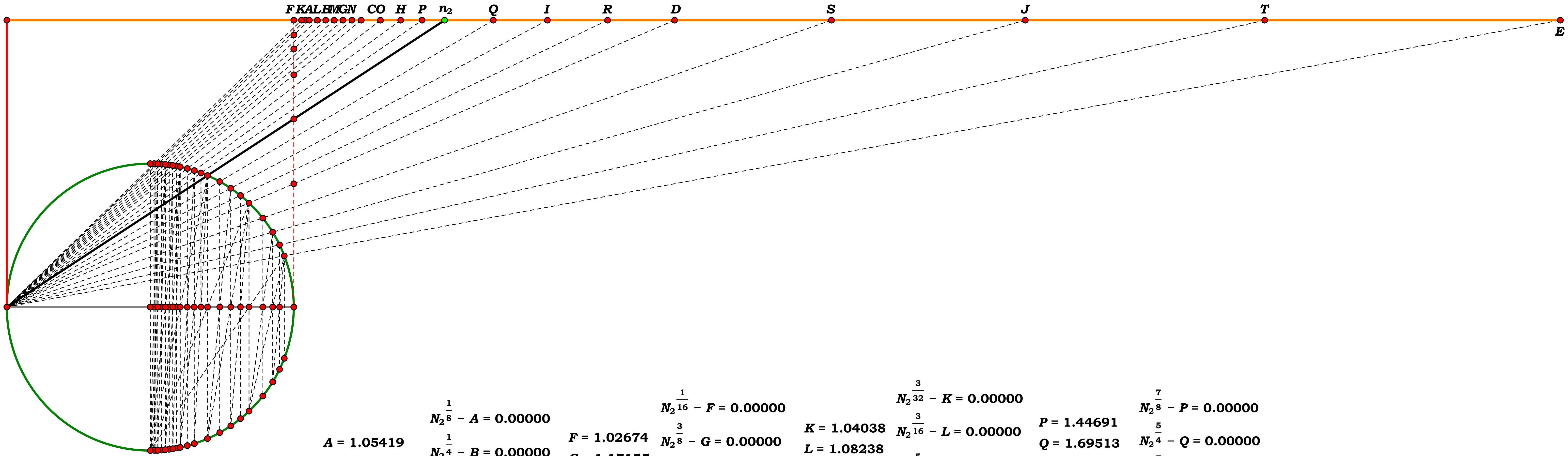
$N_2^{\frac{1}{16}} - F = 0.00000$

$N_2^{\frac{3}{8}} - G = 0.00000$

$N_2^{\frac{3}{4}} - H = 0.00000$

$N_2^{\frac{3}{2}} - I = 0.00000$

$N_2^{3} - J = 0.00000$



$N_2 = 1.52533$

$A = 1.05419$

$B = 1.11132$

$C = 1.23504$

$D = 2.32662$

$E = 5.41318$

$N_2^{\frac{1}{8}} - A = 0.00000$

$N_2^{\frac{1}{4}} - B = 0.00000$

$N_2^{\frac{1}{2}} - C = 0.00000$

$N_2^{2} - D = 0.00000$

$N_2^{4} - E = 0.00000$

$F = 1.02674$

$G = 1.17155$

$H = 1.37253$

$I = 1.88384$

$J = 3.54886$

$N_2^{\frac{1}{16}} - F = 0.00000$

$N_2^{\frac{3}{8}} - G = 0.00000$

$N_2^{\frac{3}{4}} - H = 0.00000$

$N_2^{\frac{3}{2}} - I = 0.00000$

$N_2^{3} - J = 0.00000$

$K = 1.04038$

$L = 1.08238$

$M = 1.14104$

$N = 1.20288$

$O = 1.30197$

$N_2^{\frac{3}{32}} - K = 0.00000$

$N_2^{\frac{3}{16}} - L = 0.00000$

$N_2^{\frac{5}{16}} - M = 0.00000$

$N_2^{\frac{7}{16}} - N = 0.00000$

$N_2^{\frac{5}{8}} - O = 0.00000$

$P = 1.44691$

$Q = 1.69513$

$R = 2.09356$

$S = 2.87348$

$T = 4.38299$

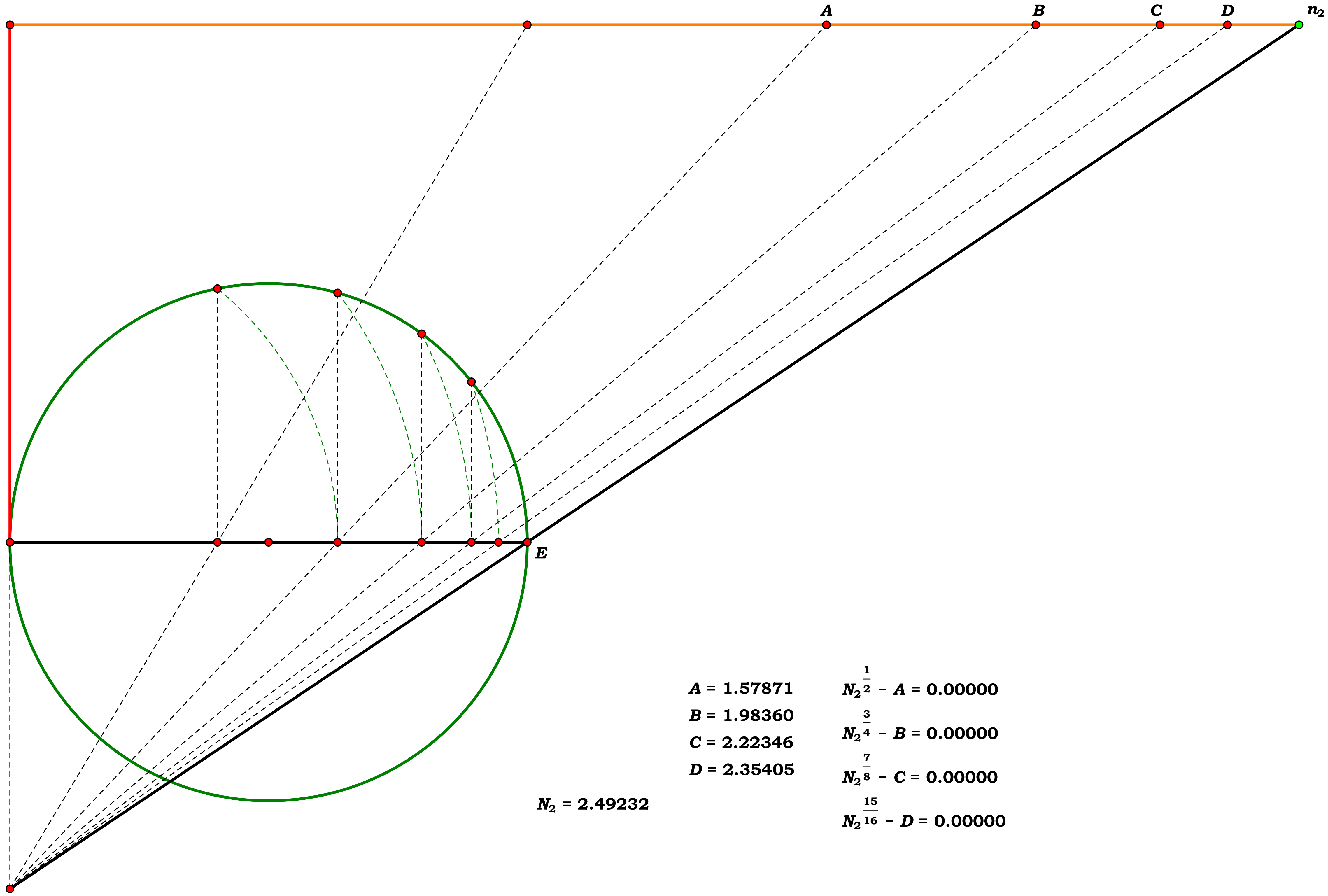
$N_2^{\frac{7}{8}} - P = 0.00000$

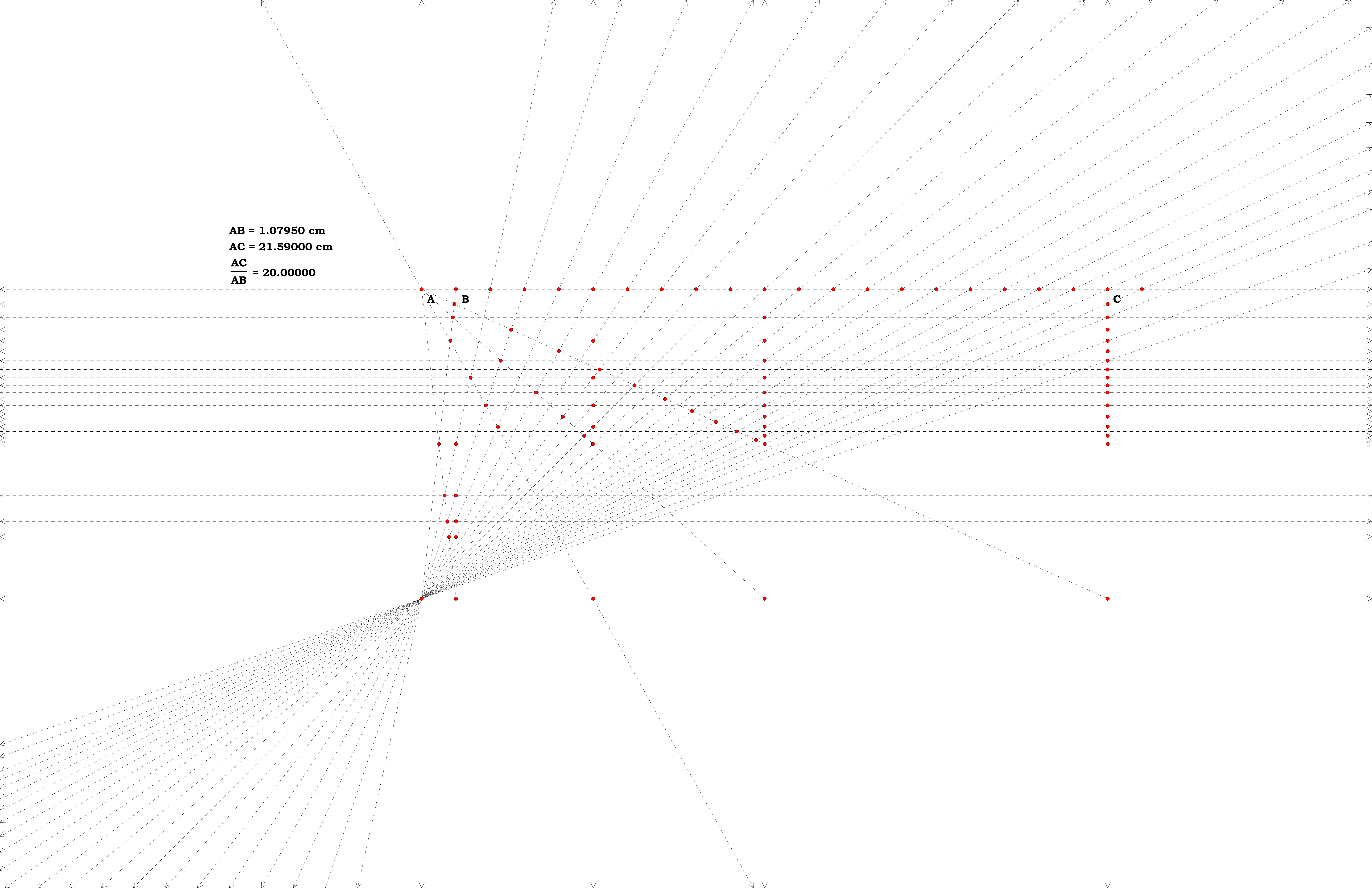
$N_2^{\frac{5}{4}} - Q = 0.00000$

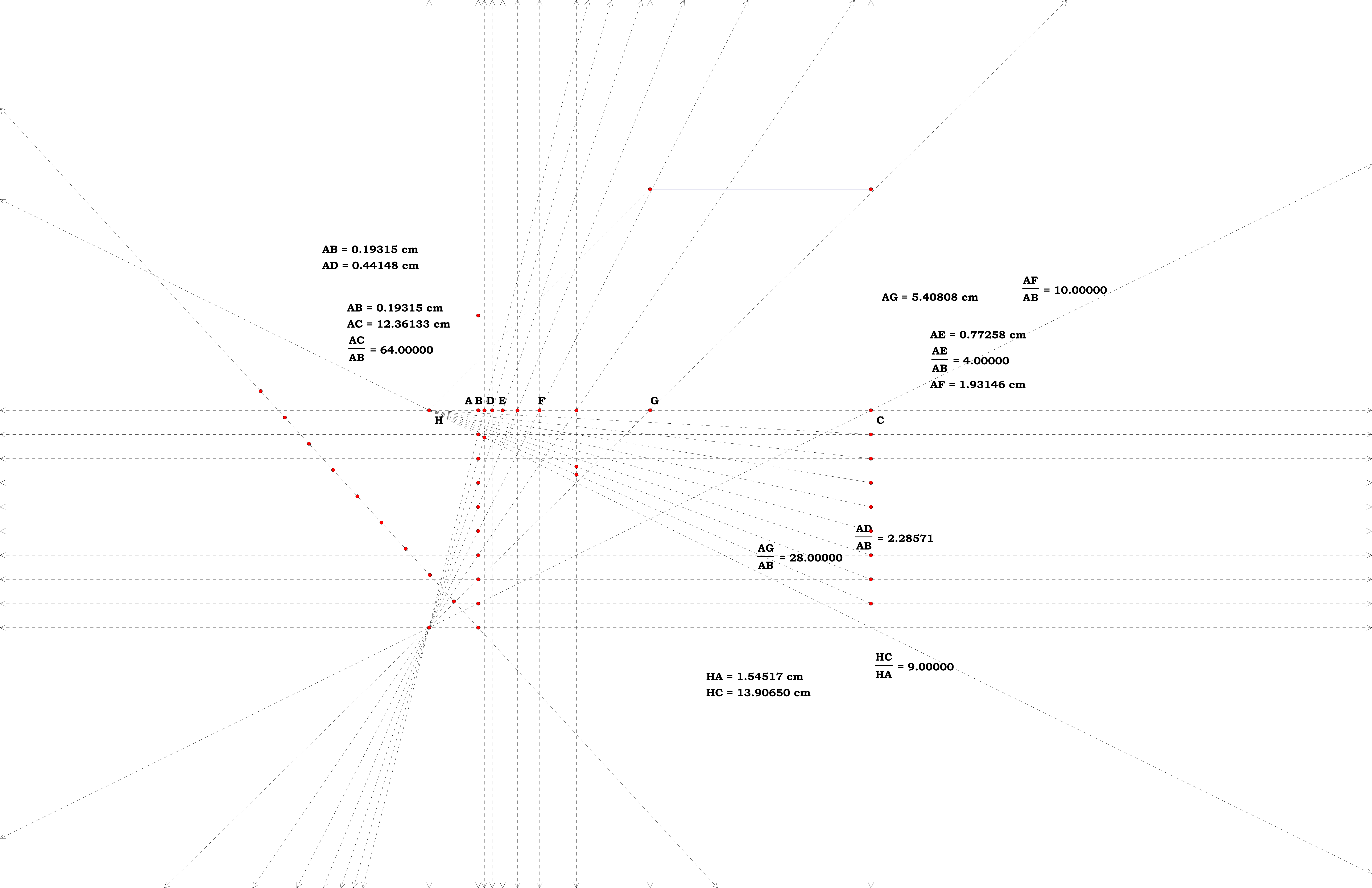
$N_2^{\frac{7}{4}} - R = 0.00000$

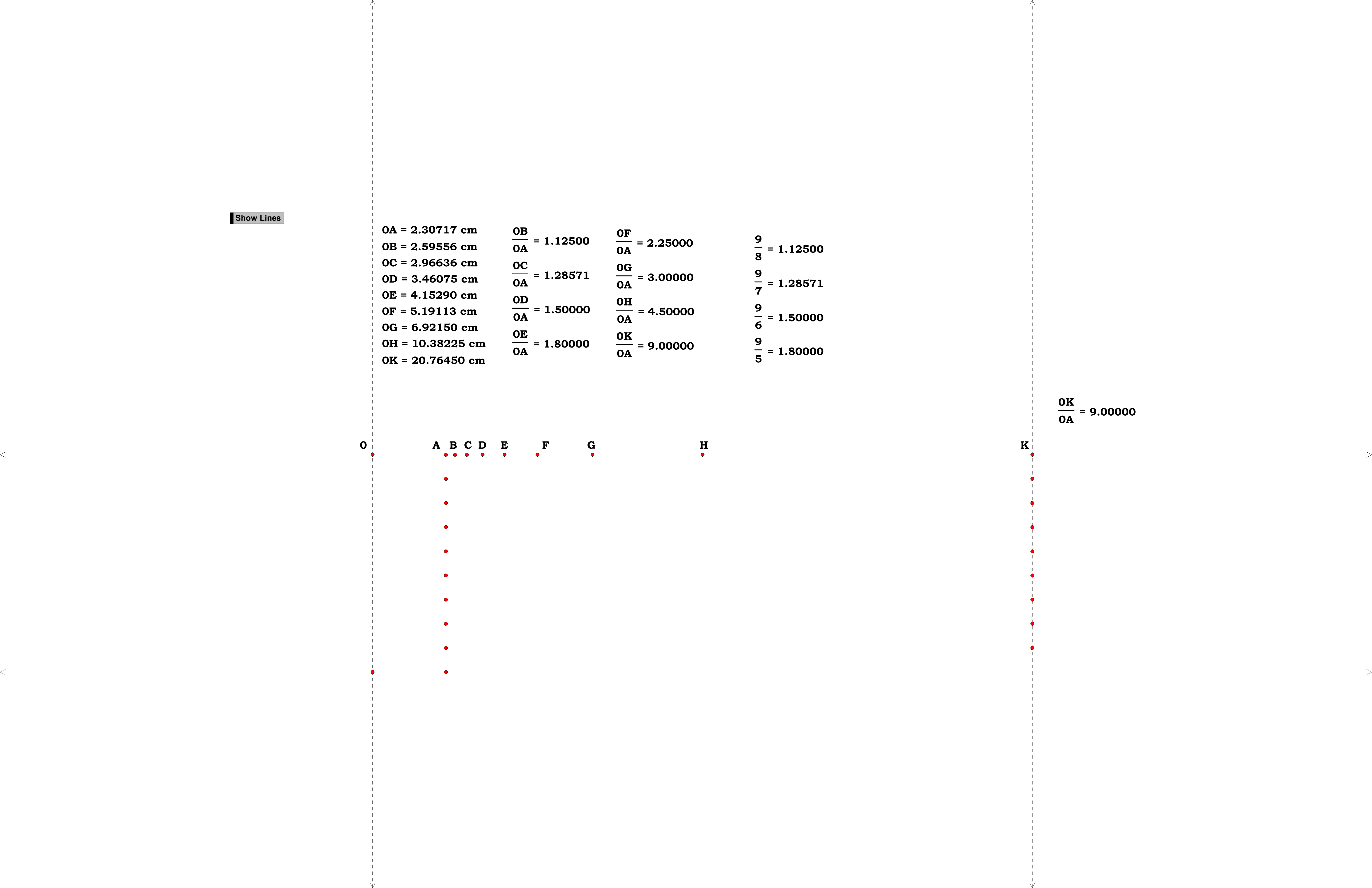
$N_2^{\frac{5}{2}} - S = 0.00000$

$N_2^{\frac{7}{2}} - T = 0.00000$


A
B
C
D
n_2
E
$A = 1.57871$
$B = 1.98360$
$C = 2.22346$
$D = 2.35405$
$N_2^{\frac{1}{2}} - A = 0.00000$
$N_2^{\frac{3}{4}} - B = 0.00000$
$N_2^{\frac{7}{8}} - C = 0.00000$
$N_2^{\frac{15}{16}} - D = 0.00000$
$N_2 = 2.49232$


AB = 1.07950 cm
AC = 21.59000 cm
AC/AB = 20.00000
A
B
C


AB = 0.19315 cm
AD = 0.44148 cm
AB = 0.19315 cm
AC = 12.36133 cm
$\frac{AC}{AB}$ = 64.00000
AG = 5.40808 cm
$\frac{AF}{AB}$ = 10.00000
AE = 0.77258 cm
$\frac{AE}{AB}$ = 4.00000
AF = 1.93146 cm
A B D E F G
H
C
$\frac{AD}{AB}$ = 2.28571
$\frac{AG}{AB}$ = 28.00000
$\frac{HC}{HA}$ = 9.00000
HA = 1.54517 cm
HC = 13.90650 cm



OA = 2.30717 cm
OB = 2.59556 cm
OC = 2.96636 cm
OD = 3.46075 cm
OE = 4.15290 cm
OF = 5.19113 cm
OG = 6.92150 cm
OH = 10.38225 cm
OK = 20.76450 cm

$\frac{OB}{OA} = 1.12500$

$\frac{OC}{OA} = 1.28571$

$\frac{OD}{OA} = 1.50000$

$\frac{OE}{OA} = 1.80000$

$\frac{OF}{OA} = 2.25000$

$\frac{OG}{OA} = 3.00000$

$\frac{OH}{OA} = 4.50000$

$\frac{OK}{OA} = 9.00000$

$\frac{9}{8} = 1.12500$

$\frac{9}{7} = 1.28571$

$\frac{9}{6} = 1.50000$

$\frac{9}{5} = 1.80000$

$\frac{OK}{OA} = 9.00000$

▮ Show Lines

▮ Show Intersections

OA = 2.41300 cm
OB = 2.71463 cm
OC = 3.10243 cm
OD = 3.61950 cm
OE = 4.34340 cm
OF = 5.42925 cm
OG = 7.23900 cm
OH = 10.85850 cm
OK = 21.71700 cm

$\frac{OB}{OA} = 1.12500$

$\frac{OC}{OA} = 1.28571$

$\frac{OD}{OA} = 1.50000$

$\frac{OE}{OA} = 1.80000$

$\frac{OF}{OA} = 2.25000$

$\frac{OG}{OA} = 3.00000$

$\frac{OH}{OA} = 4.50000$

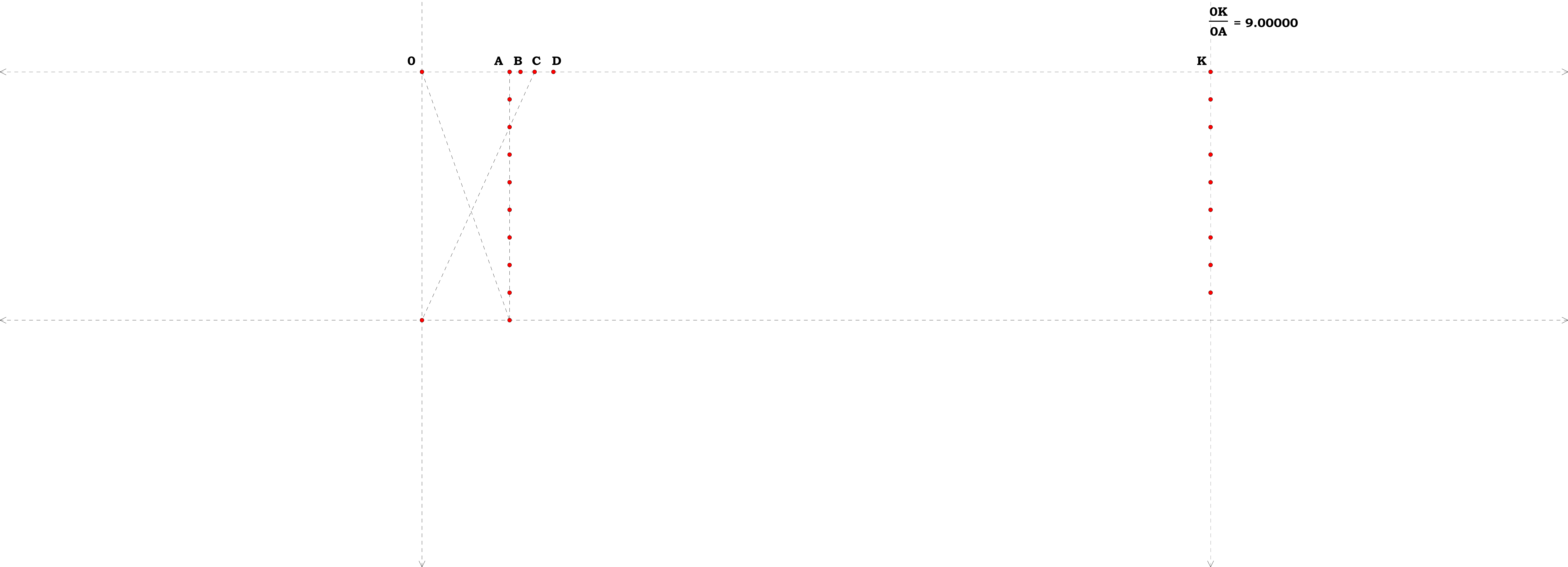
$\frac{OK}{OA} = 9.00000$

$\frac{9}{8} = 1.12500$

$\frac{9}{7} = 1.28571$

$\frac{9}{6} = 1.50000$

$\frac{9}{5} = 1.80000$



AB = 2.05317 cm
AC = 4.10633 cm
AD = 6.15950 cm
AE = 2.36904 cm
AF = 2.79977 cm
AG = 3.42194 cm
AH = 4.39964 cm

$\frac{AC}{AB} = 2.00000$

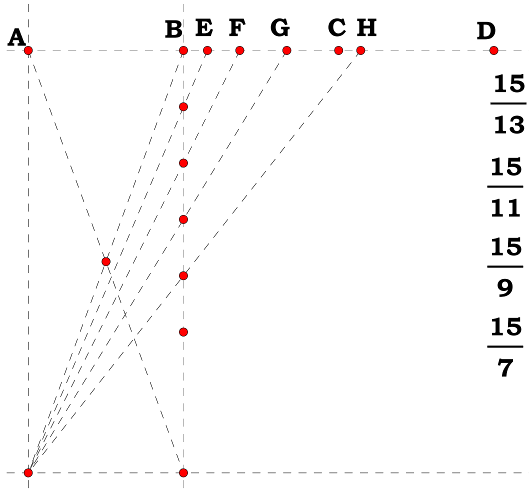
$\frac{AD}{AB} = 3.00000$

$\frac{AE}{AB} = 1.15385$ $\quad \frac{5\cdot3}{3+10} = 1.15385$

$\frac{AF}{AB} = 1.36364$ $\quad \frac{5\cdot3}{3+8} = 1.36364$

$\frac{AG}{AB} = 1.66667$ $\quad \frac{5}{3} = 1.66667$

$\frac{AH}{AB} = 2.14286$ $\quad \frac{5\cdot3}{3+4} = 2.14286$



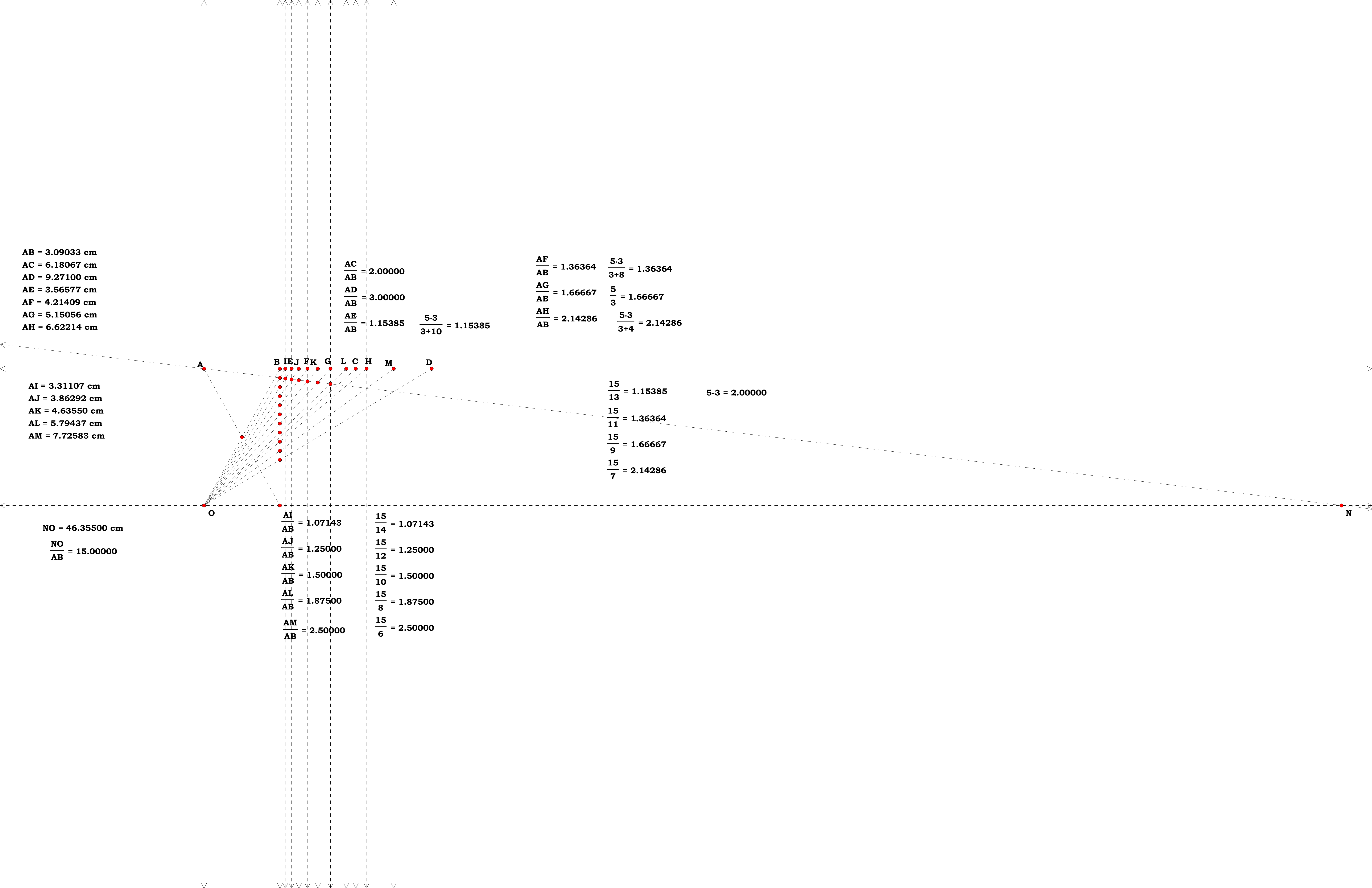
$\frac{15}{13} = 1.15385$

$\frac{15}{11} = 1.36364$

$\frac{15}{9} = 1.66667$

$\frac{15}{7} = 2.14286$

$5-3 = 2.00000$



AB = 3.09033 cm
AC = 6.18067 cm
AD = 9.27100 cm
AE = 3.56577 cm
AF = 4.21409 cm
AG = 5.15056 cm
AH = 6.62214 cm

$\frac{AC}{AB} = 2.00000$

$\frac{AD}{AB} = 3.00000$

$\frac{AE}{AB} = 1.15385$ $\frac{5 \cdot 3}{3+10} = 1.15385$

$\frac{AF}{AB} = 1.36364$ $\frac{5 \cdot 3}{3+8} = 1.36364$

$\frac{AG}{AB} = 1.66667$ $\frac{5}{3} = 1.66667$

$\frac{AH}{AB} = 2.14286$ $\frac{5 \cdot 3}{3+4} = 2.14286$

AI = 3.31107 cm
AJ = 3.86292 cm
AK = 4.63550 cm
AL = 5.79437 cm
AM = 7.72583 cm

$\frac{15}{13} = 1.15385$

$\frac{15}{11} = 1.36364$

$\frac{15}{9} = 1.66667$

$\frac{15}{7} = 2.14286$

5-3 = 2.00000

NO = 46.35500 cm

$\frac{NO}{AB} = 15.00000$

$\frac{AI}{AB} = 1.07143$ $\frac{15}{14} = 1.07143$

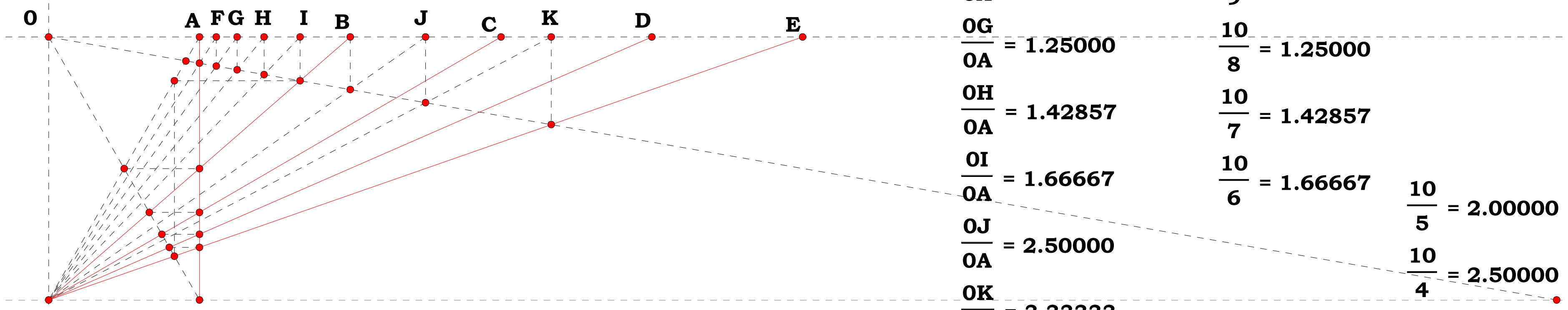
$\frac{AJ}{AB} = 1.25000$ $\frac{15}{12} = 1.25000$

$\frac{AK}{AB} = 1.50000$ $\frac{15}{10} = 1.50000$

$\frac{AL}{AB} = 1.87500$ $\frac{15}{8} = 1.87500$

$\frac{AM}{AB} = 2.50000$ $\frac{15}{6} = 2.50000$

0A = 2.39183 cm
0B = 4.78367 cm
0C = 7.17550 cm
0D = 9.56733 cm
0E = 11.95917 cm
0F = 2.65759 cm
0G = 2.98979 cm
0H = 3.41690 cm
0I = 3.98639 cm
0J = 5.97958 cm
0K = 7.97278 cm



$\frac{0B}{0A} = 2.00000$

$\frac{0C}{0A} = 3.00000$

$\frac{0D}{0A} = 4.00000$

$\frac{0E}{0A} = 5.00000$

$\frac{0F}{0A} = 1.11111$ $\frac{10}{9} = 1.11111$

$\frac{0G}{0A} = 1.25000$ $\frac{10}{8} = 1.25000$

$\frac{0H}{0A} = 1.42857$ $\frac{10}{7} = 1.42857$

$\frac{0I}{0A} = 1.66667$ $\frac{10}{6} = 1.66667$

$\frac{10}{5} = 2.00000$

$\frac{0J}{0A} = 2.50000$ $\frac{10}{4} = 2.50000$

$\frac{0K}{0A} = 3.33333$ $\frac{10}{3} = 3.33333$

0A = 1.94733 cm
0B = 3.89467 cm
0C = 5.84200 cm
0D = 7.78933 cm
0E = 9.73667 cm
0F = 2.16370 cm
0G = 2.43417 cm
0H = 2.78190 cm
0I = 3.24556 cm
0J = 4.86833 cm
0K = 6.49111 cm

$\frac{0C}{0A} = 3.00000$

$\frac{0D}{0A} = 4.00000$

$\frac{0E}{0A} = 5.00000$

$\frac{0F}{0A} = 1.11111$

$\frac{0G}{0A} = 1.25000$

$\frac{0H}{0A} = 1.42857$

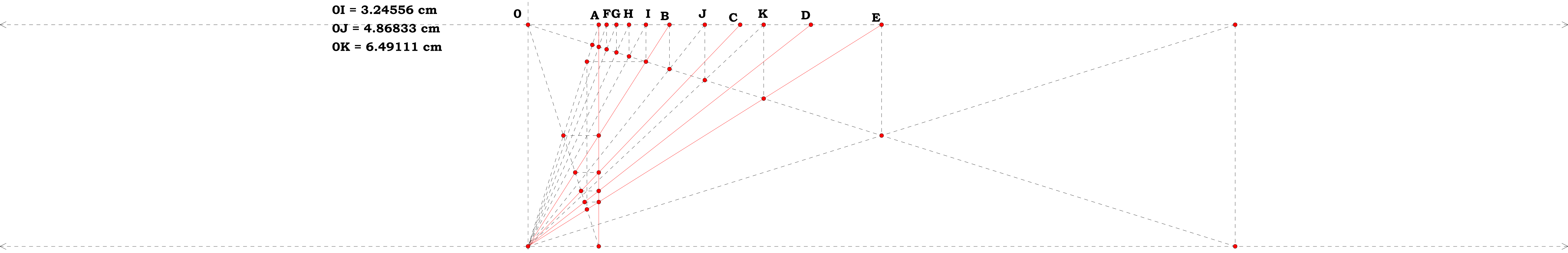
$\frac{0I}{0A} = 1.66667$

$\frac{0J}{0A} = 2.50000$

$\frac{0K}{0A} = 3.33333$

$\frac{0B}{0A} = 2.00000$

$\frac{10}{2} = 5.00000$



$\frac{10}{9} = 1.11111$

$\frac{10}{8} = 1.25000$

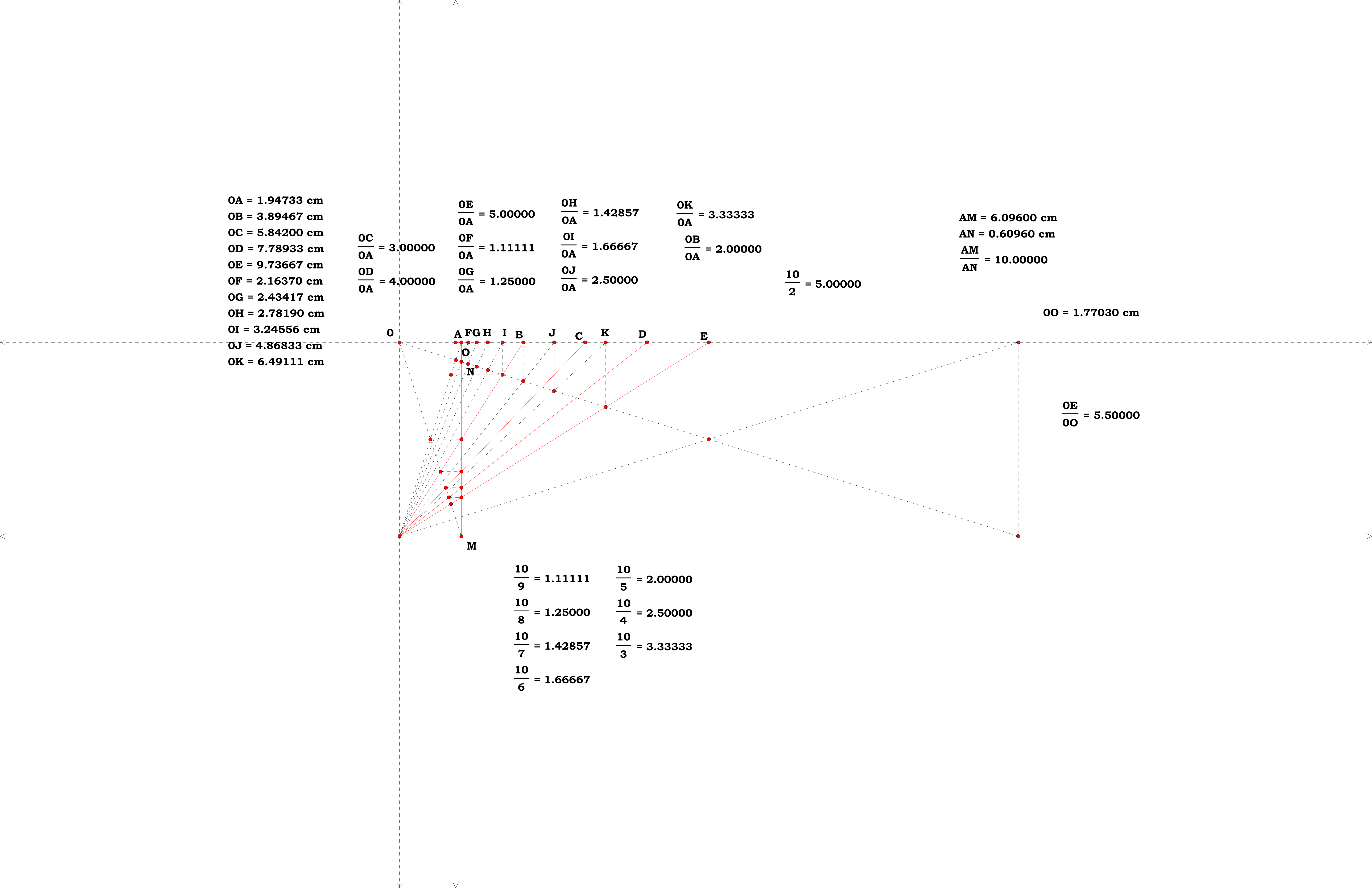
$\frac{10}{7} = 1.42857$

$\frac{10}{6} = 1.66667$

$\frac{10}{5} = 2.00000$

$\frac{10}{4} = 2.50000$

$\frac{10}{3} = 3.33333$



0A = 1.94733 cm
0B = 3.89467 cm
0C = 5.84200 cm
0D = 7.78933 cm
0E = 9.73667 cm
0F = 2.16370 cm
0G = 2.43417 cm
0H = 2.78190 cm
0I = 3.24556 cm
0J = 4.86833 cm
0K = 6.49111 cm

$\frac{0C}{0A} = 3.00000$

$\frac{0D}{0A} = 4.00000$

$\frac{0E}{0A} = 5.00000$

$\frac{0F}{0A} = 1.11111$

$\frac{0G}{0A} = 1.25000$

$\frac{0H}{0A} = 1.42857$

$\frac{0I}{0A} = 1.66667$

$\frac{0J}{0A} = 2.50000$

$\frac{0K}{0A} = 3.33333$

$\frac{0B}{0A} = 2.00000$

$\frac{10}{2} = 5.00000$

AM = 6.09600 cm
AN = 0.60960 cm

$\frac{AM}{AN} = 10.00000$

0O = 1.77030 cm

$\frac{0E}{0O} = 5.50000$

$\frac{10}{9} = 1.11111$

$\frac{10}{8} = 1.25000$

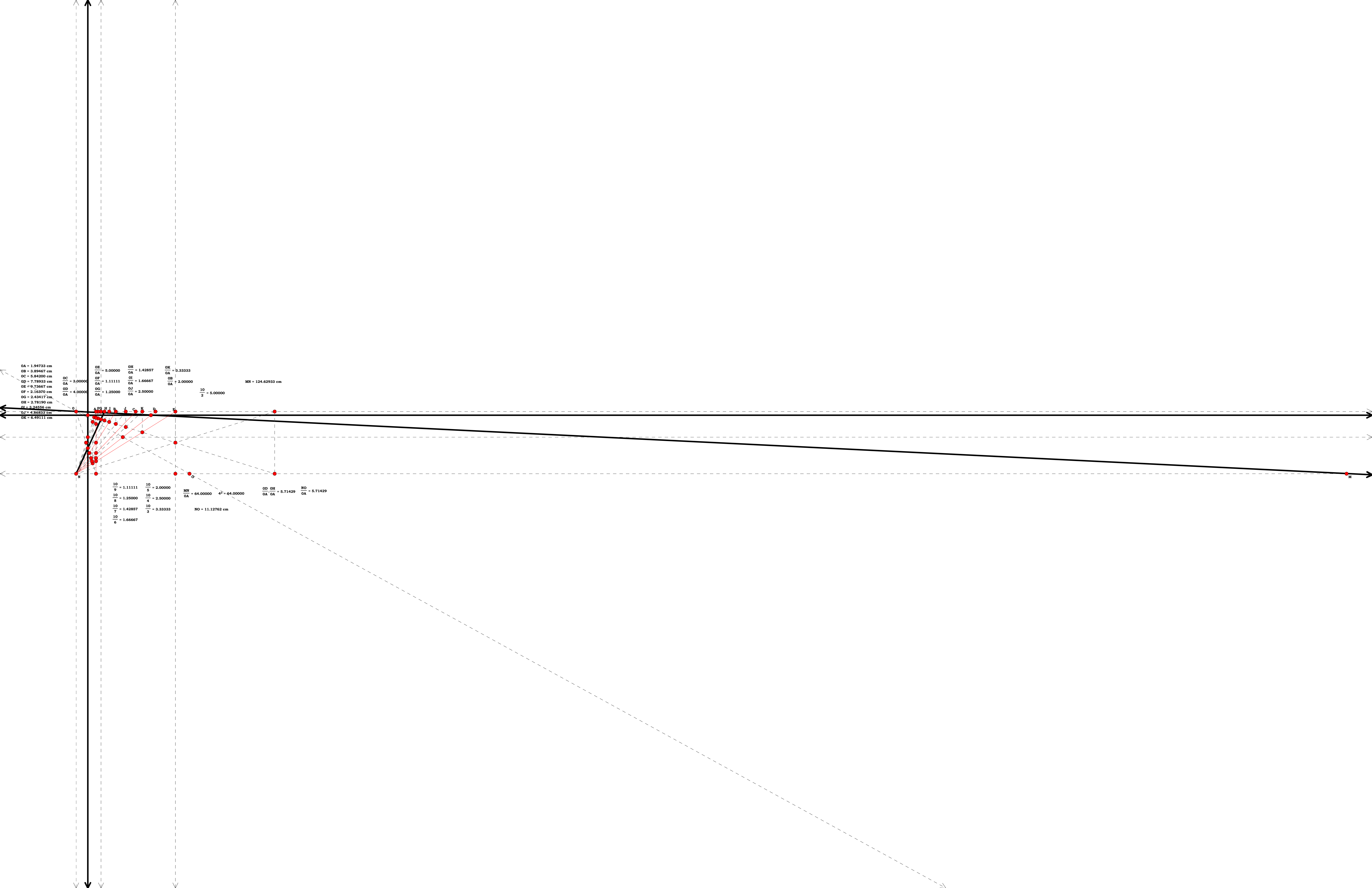
$\frac{10}{7} = 1.42857$

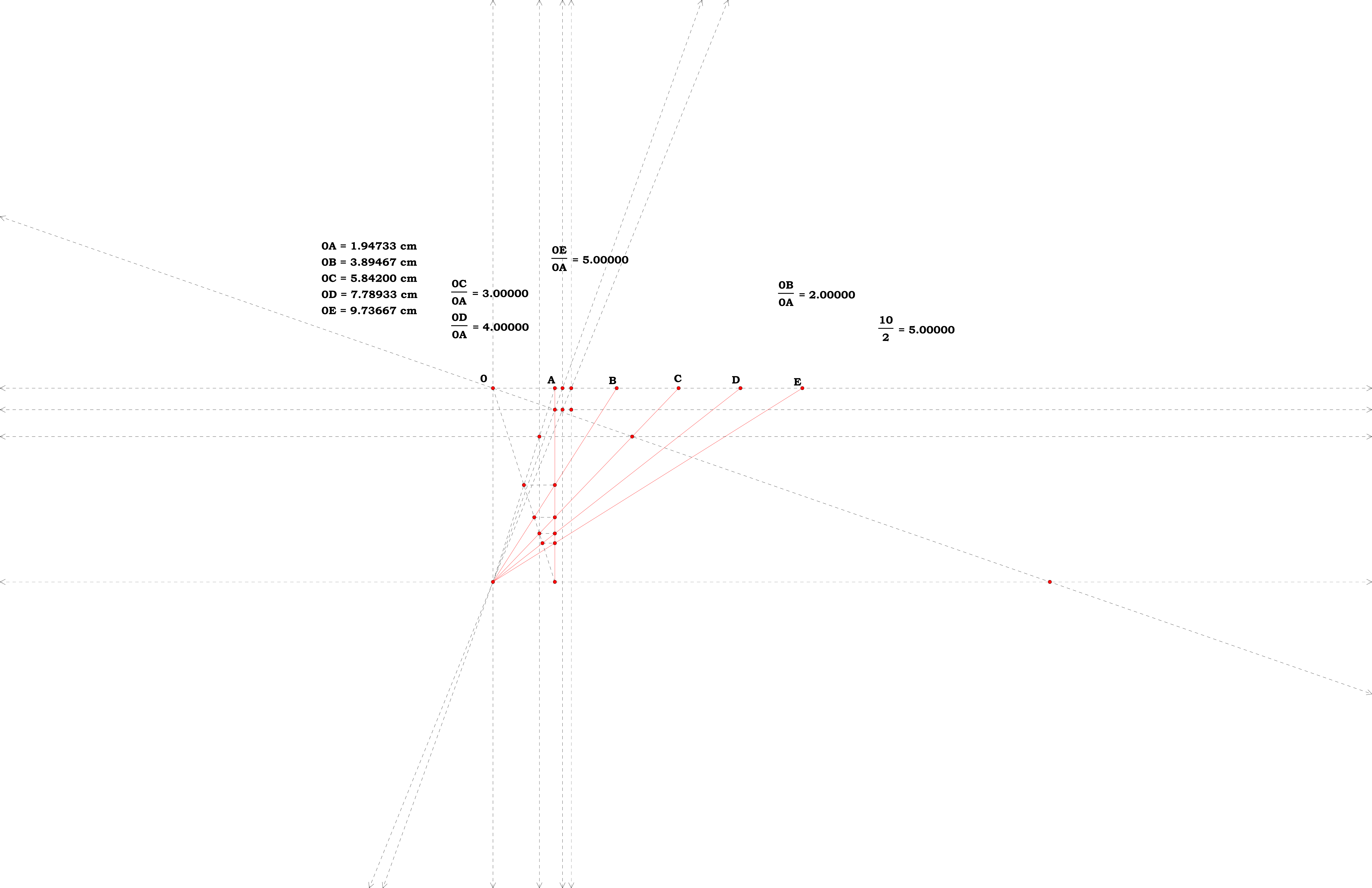
$\frac{10}{6} = 1.66667$

$\frac{10}{5} = 2.00000$

$\frac{10}{4} = 2.50000$

$\frac{10}{3} = 3.33333$


0A = 1.94733 cm
0B = 3.89467 cm
0C = 5.84200 cm
0D = 7.78933 cm
0E = 9.73667 cm
0F = 2.16370 cm
0G = 2.43417 cm
0H = 2.78190 cm
0I = 3.24556 cm
0J = 4.86833 cm
0K = 6.49111 cm
0C/0A = 3.00000
0D/0A = 4.00000
0E/0A = 5.00000
0F/0A = 1.11111
0G/0A = 1.25000
0H/0A = 1.42857
0I/0A = 1.66667
0J/0A = 2.50000
0K/0A = 3.33333
0B/0A = 2.00000
10/2 = 5.00000
MN = 124.62933 cm
0
A
F
G
H
I
B
J
C
K
D
E
N
O
M
10/9 = 1.11111
10/8 = 1.25000
10/7 = 1.42857
10/6 = 1.66667
10/5 = 2.00000
10/4 = 2.50000
10/3 = 3.33333
MN/0A = 64.00000
4³ = 64.00000
NO = 11.12762 cm
0D/0A · 0H/0A = 5.71429
NO/0A = 5.71429



0A = 1.94733 cm
0B = 3.89467 cm
0C = 5.84200 cm
0D = 7.78933 cm
0E = 9.73667 cm

$\frac{0E}{0A} = 5.00000$

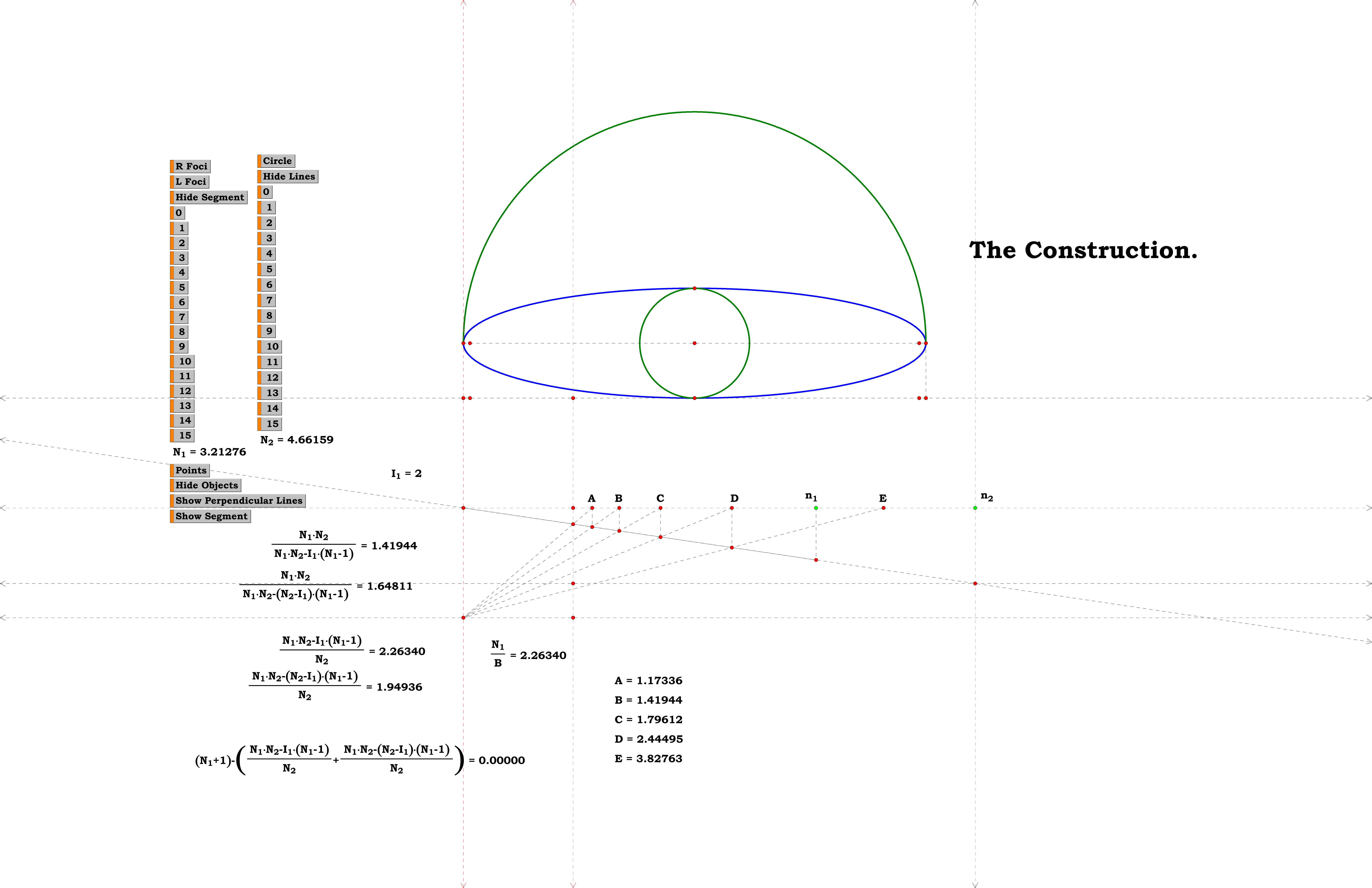
$\frac{0C}{0A} = 3.00000$

$\frac{0D}{0A} = 4.00000$

$\frac{0B}{0A} = 2.00000$

$\frac{10}{2} = 5.00000$

The Construction.



$N_1 = 3.21276$

$N_2 = 4.66159$

$I_1 = 2$

$$\frac{N_1\cdot N_2}{N_1\cdot N_2-I_1\cdot(N_1-1)} = 1.41944$$

$$\frac{N_1\cdot N_2}{N_1\cdot N_2-(N_2-I_1)\cdot(N_1-1)} = 1.64811$$

$$\frac{N_1\cdot N_2-I_1\cdot(N_1-1)}{N_2} = 2.26340$$

$$\frac{N_1}{B} = 2.26340$$

$$\frac{N_1\cdot N_2-(N_2-I_1)\cdot(N_1-1)}{N_2} = 1.94936$$

$$(N_1+1)-\left(\frac{N_1\cdot N_2-I_1\cdot(N_1-1)}{N_2}+\frac{N_1\cdot N_2-(N_2-I_1)\cdot(N_1-1)}{N_2}\right) = 0.00000$$

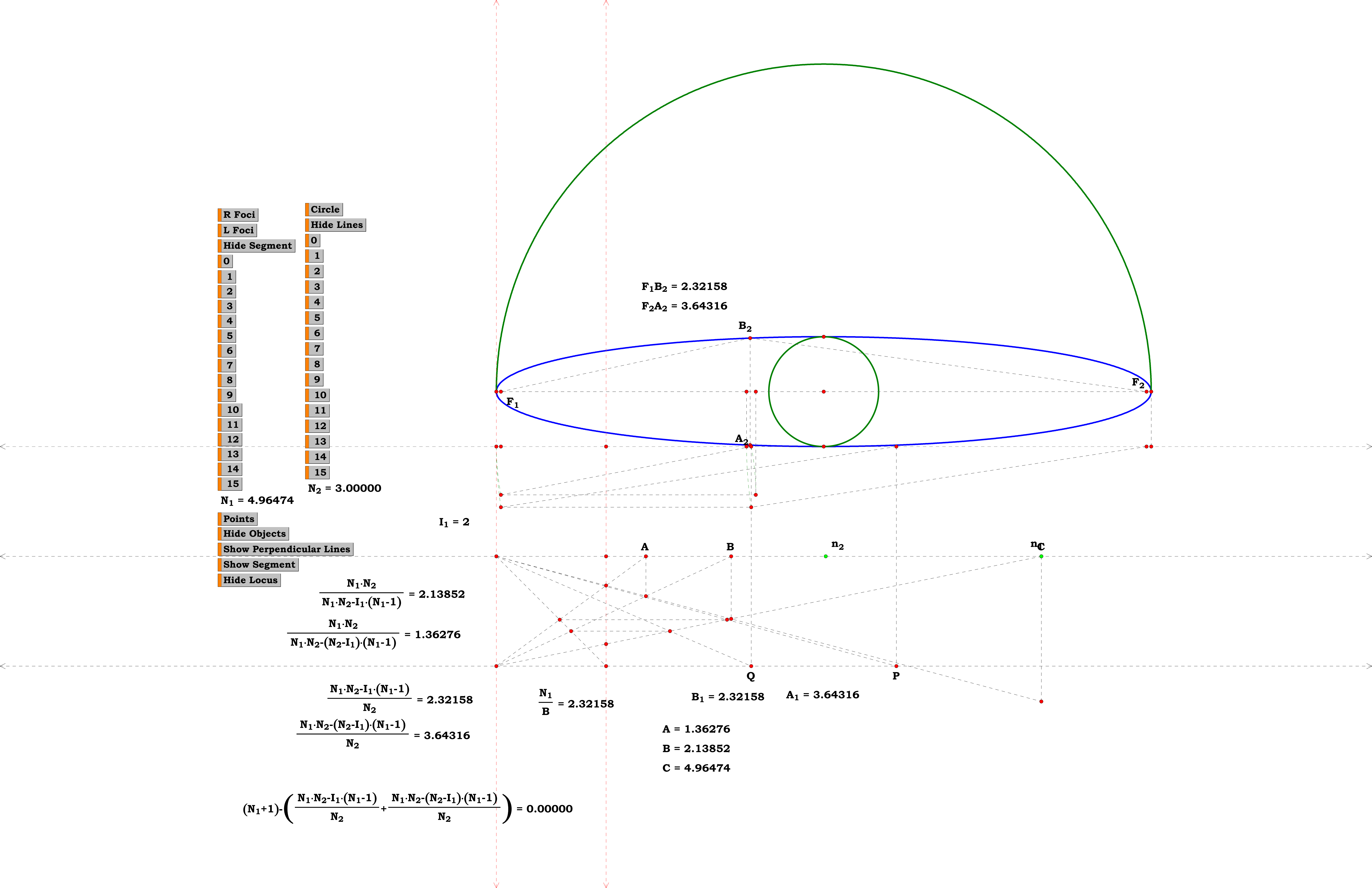
A = 1.17336

B = 1.41944

C = 1.79612

D = 2.44495

E = 3.82763



$F_1B_2 = 2.32158$

$F_2A_2 = 3.64316$

$N_1 = 4.96474$

$N_2 = 3.00000$

$I_1 = 2$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)} = 2.13852$$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)} = 1.36276$$

$$\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} = 2.32158$$

$$\frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} = 3.64316$$

$$\frac{N_1}{B} = 2.32158$$

$B_1 = 2.32158$

$A_1 = 3.64316$

$A = 1.36276$

$B = 2.13852$

$C = 4.96474$

$$(N_1 + 1) - \left(\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} + \frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} \right) = 0.00000$$

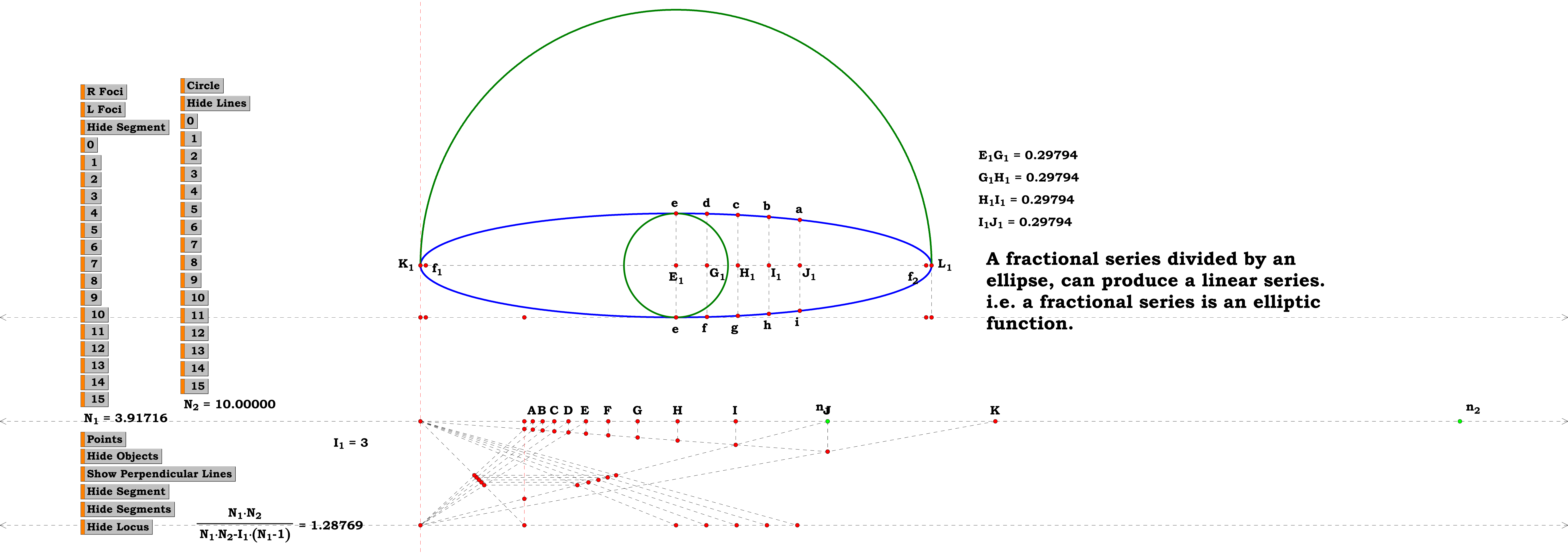
$E_1G_1 = 0.29794$

$G_1H_1 = 0.29794$

$H_1I_1 = 0.29794$

$I_1J_1 = 0.29794$

A fractional series divided by an ellipse, can produce a linear series. i.e. a fractional series is an elliptic function.



$N_2 = 10.00000$

$N_1 = 3.91716$

$I_1 = 3$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - I_1 \cdot (N_1-1)} = 1.28769$$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1-1)} = 2.08899$$

$$\frac{N_1 \cdot N_2 - I_1 \cdot (N_1-1)}{N_2} = 3.04201$$

$$\frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1-1)}{N_2} = 1.87515$$

$$(N_1+1)-\left(\frac{N_1 \cdot N_2 - I_1 \cdot (N_1-1)}{N_2}+\frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1-1)}{N_2}\right) = 0.00000$$

$$\frac{N_1}{B} = 3.33373$$

$K_1L_1 = 4.91716$

$A = 1.08046$
$B = 1.17501$
$C = 1.28769$
$D = 1.42427$
$E = 1.59326$

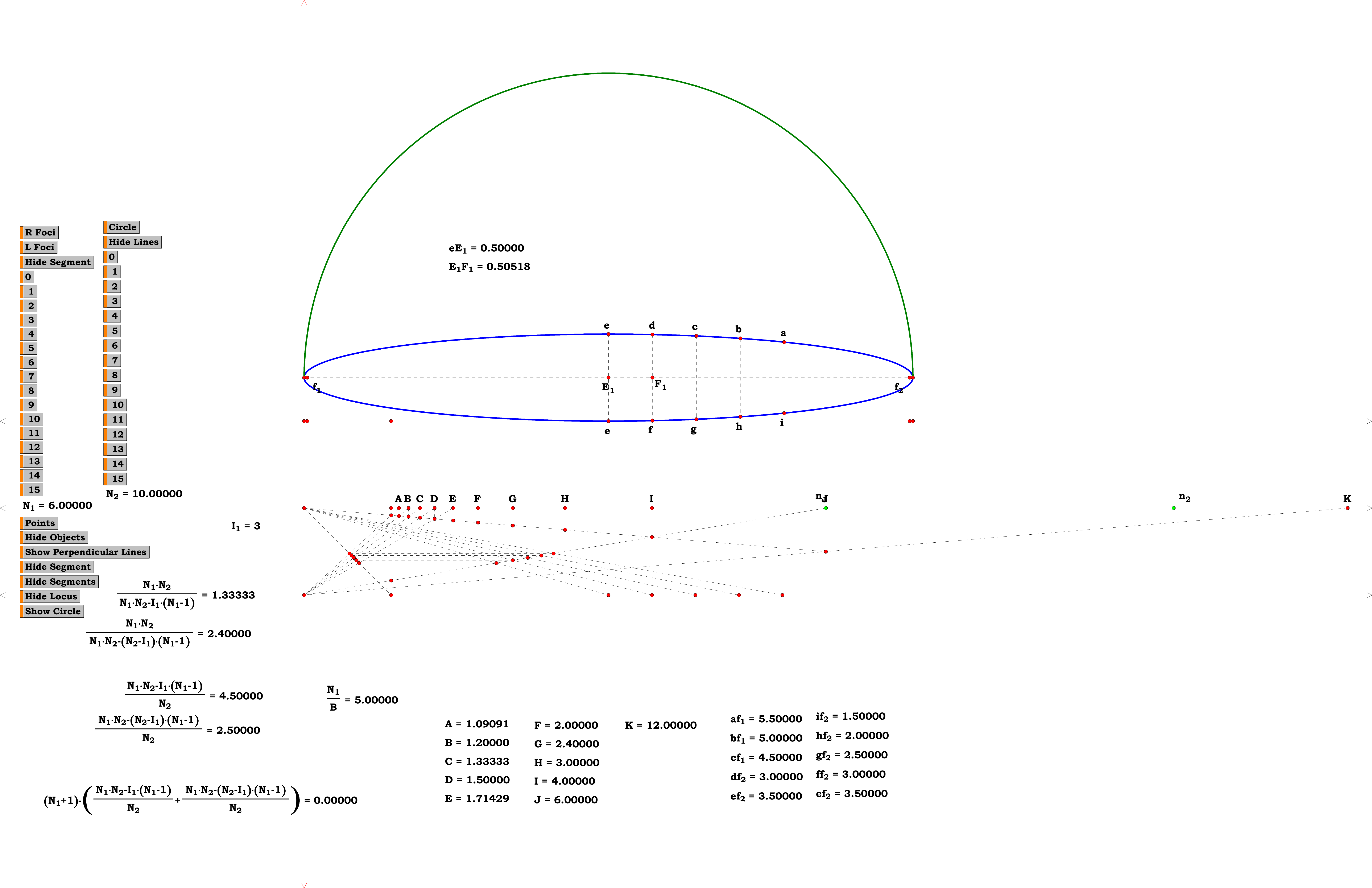
$F = 1.80776$
$G = 2.08899$
$H = 2.47384$
$I = 3.03253$
$J = 3.91716$

$K = 5.53050$

$af_1 = 3.62545$
$bf_1 = 3.33373$
$cf_1 = 3.04201$
$df_2 = 2.16687$
$ef_2 = 2.45858$

$if_2 = 1.29172$
$hf_2 = 1.58343$
$gf_2 = 1.87515$
$ff_2 = 2.16687$
$ef_2 = 2.45858$

$(af_1+if_2)-K_1L_1 = 0.00000$
$(bf_1+hf_2)-K_1L_1 = 0.00000$
$(cf_1+gf_2)-K_1L_1 = 0.00000$
$(df_2+ff_2)-K_1L_1 = -0.58343$
$(ef_2+ef_2)-K_1L_1 = 0.00000$



$eE_1 = 0.50000$

$E_1F_1 = 0.50518$

$N_2 = 10.00000$

$N_1 = 6.00000$

$I_1 = 3$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)} = 1.33333$$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)} = 2.40000$$

$$\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} = 4.50000$$

$$\frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} = 2.50000$$

$$\frac{N_1}{B} = 5.00000$$

$$(N_1+1) - \left(\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} + \frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} \right) = 0.00000$$

$A = 1.09091$

$B = 1.20000$

$C = 1.33333$

$D = 1.50000$

$E = 1.71429$

$F = 2.00000$

$G = 2.40000$

$H = 3.00000$

$I = 4.00000$

$J = 6.00000$

$K = 12.00000$

$af_1 = 5.50000$

$bf_1 = 5.00000$

$cf_1 = 4.50000$

$df_2 = 3.00000$

$ef_2 = 3.50000$

$if_2 = 1.50000$

$hf_2 = 2.00000$

$gf_2 = 2.50000$

$ff_2 = 3.00000$

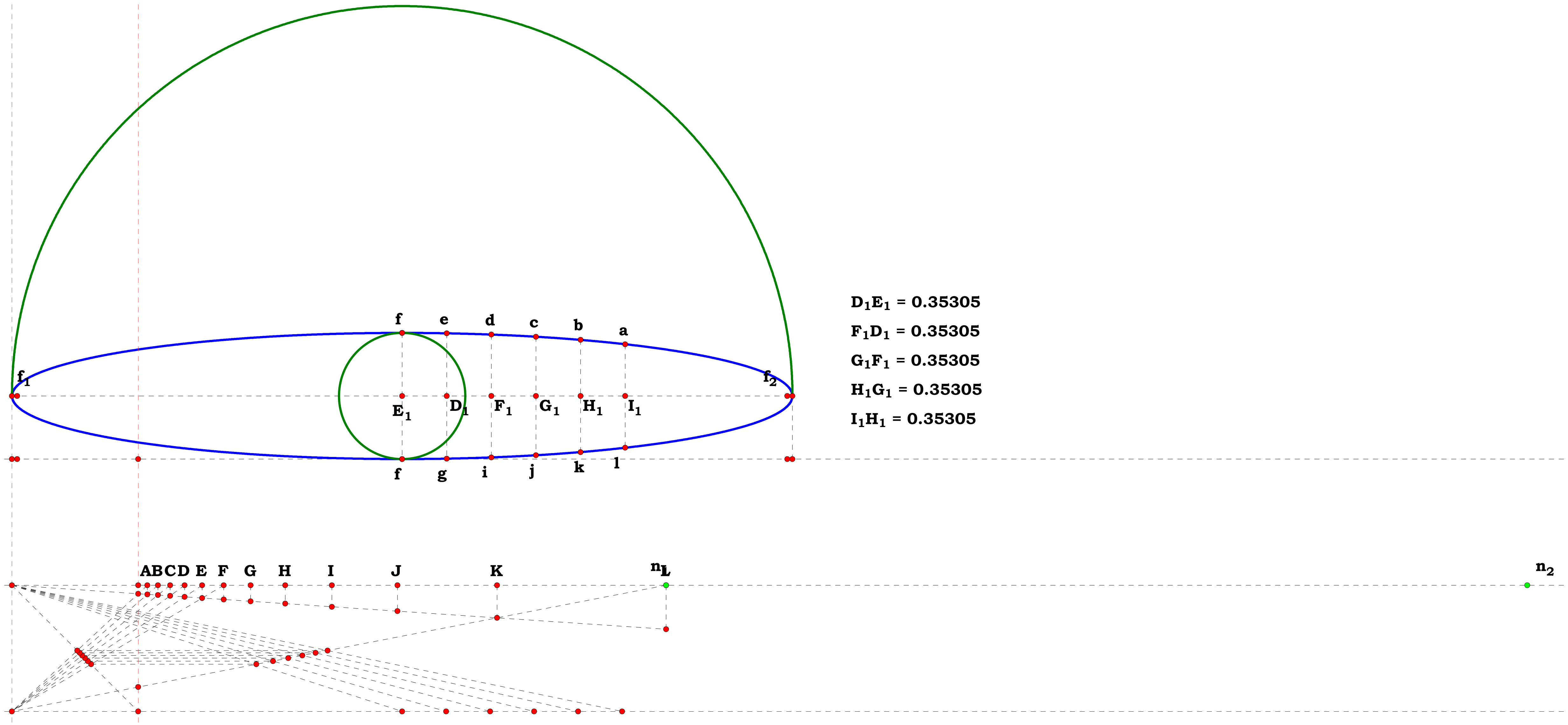
$ef_2 = 3.50000$

R Foci
L Foci
Hide Segment
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

$N_1 = 5.18079$

Circle
Hide Lines
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

$N_2 = 12.00000$



$D_1E_1 = 0.35305$

$F_1D_1 = 0.35305$

$G_1F_1 = 0.35305$

$H_1G_1 = 0.35305$

$I_1H_1 = 0.35305$

$I_1 = 1$

Points
Hide Objects
Show Perpendicular Lines
Hide Segment
Show Segments
Hide Objects

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)} = 1.07210$$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)} = 3.84218$$

$$\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} = 4.83240$$

$$\frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} = 1.34840$$

$$\frac{N_1}{B} = 4.48400$$

$$(N_1 + 1) - \left(\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} + \frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} \right) = 0.00000$$

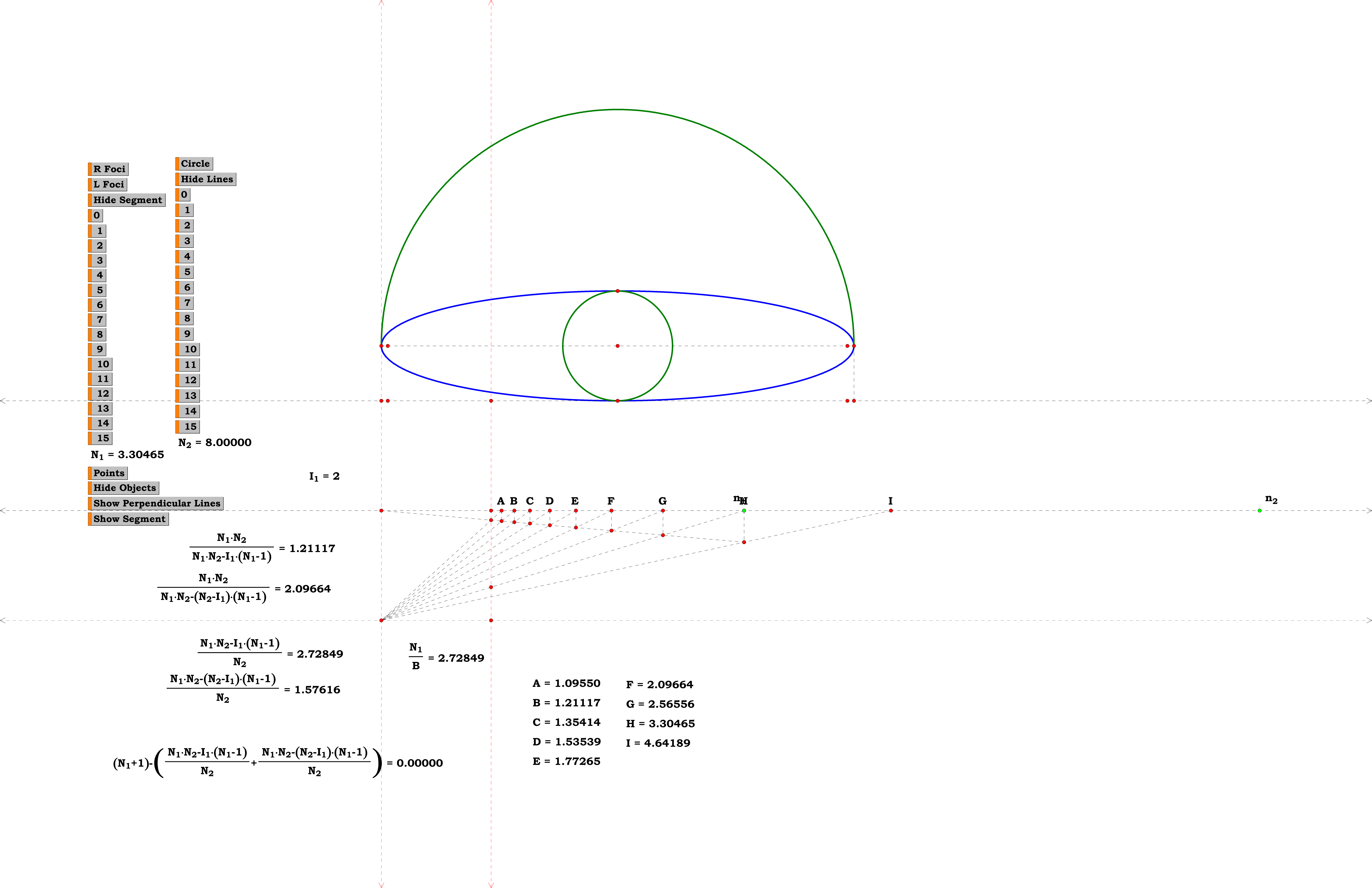
A = 1.07210
B = 1.15540
C = 1.25273
D = 1.36798
E = 1.50657

F = 1.67642
G = 1.88942
H = 2.16444
I = 2.53315
J = 3.05328

K = 3.84218
L = 5.18079

$lf_1 = 4.83240$
$kf_1 = 4.48400$
$jf_1 = 4.13560$
$if_1 = 3.78720$
$gf_1 = 3.43880$
$ff_1 = 3.09040$

$af_2 = 1.34840$
$bf_2 = 1.69680$
$cf_2 = 2.04520$
$df_2 = 2.39360$
$ef_2 = 2.74200$
$ff_2 = 3.09040$



$N_1 = 3.30465$

$N_2 = 8.00000$

$I_1 = 2$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)} = 1.21117$$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)} = 2.09664$$

$$\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} = 2.72849$$

$$\frac{N_1}{B} = 2.72849$$

$$\frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} = 1.57616$$

$A = 1.09550$

$B = 1.21117$

$C = 1.35414$

$D = 1.53539$

$E = 1.77265$

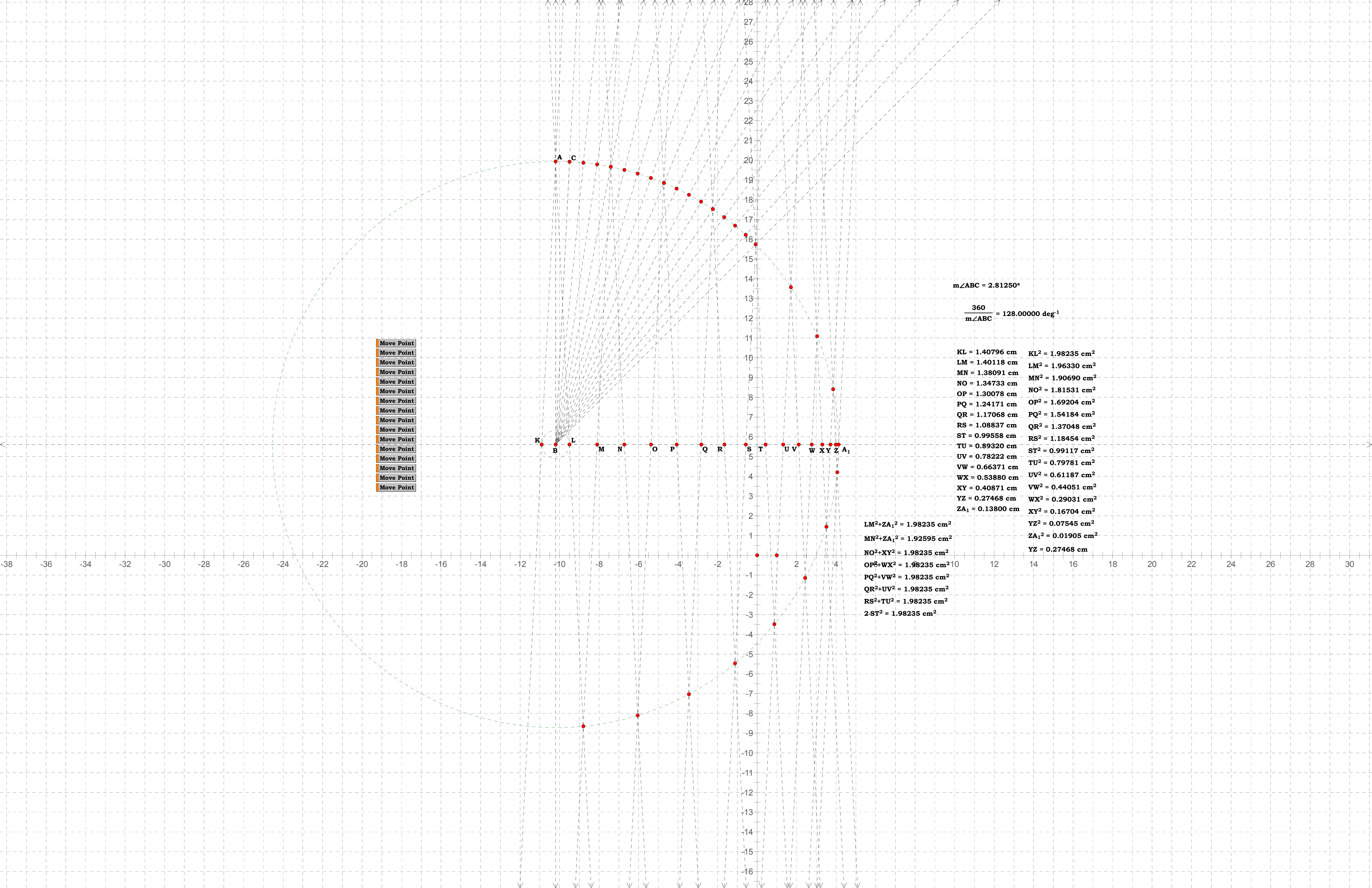
$F = 2.09664$

$G = 2.56556$

$H = 3.30465$

$I = 4.64189$

$$(N_1 + 1) - \left(\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} + \frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} \right) = 0.00000$$



$m\angle ABC = 2.81250°$

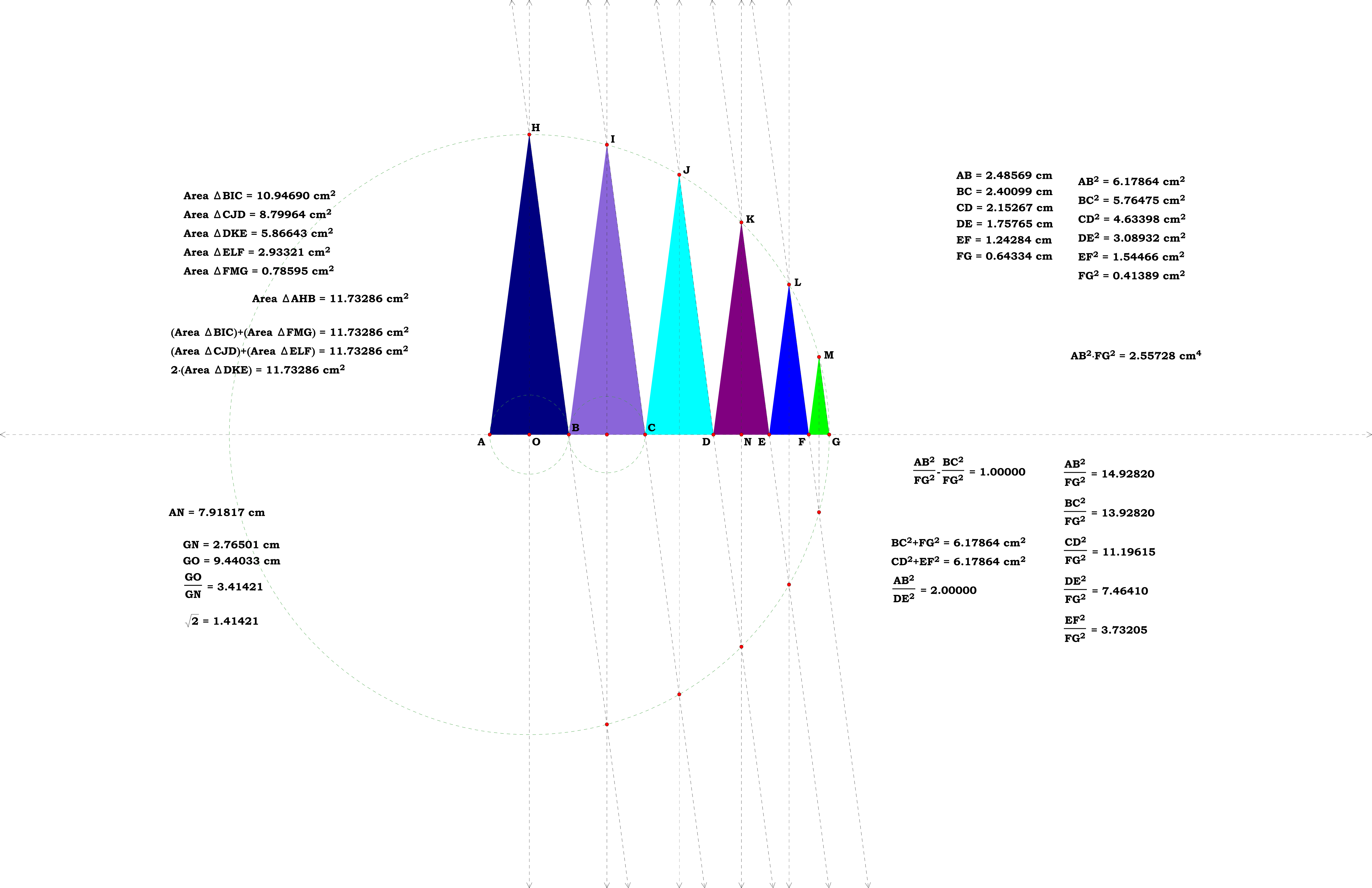
$$\frac{360}{m\angle ABC} = 128.00000\ \mathrm{deg}^{-1}$$

$KL = 1.40796$ cm
$LM = 1.40118$ cm
$MN = 1.38091$ cm
$NO = 1.34733$ cm
$OP = 1.30078$ cm
$PQ = 1.24171$ cm
$QR = 1.17068$ cm
$RS = 1.08837$ cm
$ST = 0.99558$ cm
$TU = 0.89320$ cm
$UV = 0.78222$ cm
$VW = 0.66371$ cm
$WX = 0.53880$ cm
$XY = 0.40871$ cm
$YZ = 0.27468$ cm
$ZA_1 = 0.13800$ cm

$KL^2 = 1.98235\ \mathrm{cm}^2$
$LM^2 = 1.96330\ \mathrm{cm}^2$
$MN^2 = 1.90690\ \mathrm{cm}^2$
$NO^2 = 1.81531\ \mathrm{cm}^2$
$OP^2 = 1.69204\ \mathrm{cm}^2$
$PQ^2 = 1.54184\ \mathrm{cm}^2$
$QR^2 = 1.37048\ \mathrm{cm}^2$
$RS^2 = 1.18454\ \mathrm{cm}^2$
$ST^2 = 0.99117\ \mathrm{cm}^2$
$TU^2 = 0.79781\ \mathrm{cm}^2$
$UV^2 = 0.61187\ \mathrm{cm}^2$
$VW^2 = 0.44051\ \mathrm{cm}^2$
$WX^2 = 0.29031\ \mathrm{cm}^2$
$XY^2 = 0.16704\ \mathrm{cm}^2$
$YZ^2 = 0.07545\ \mathrm{cm}^2$
$ZA_1^2 = 0.01905\ \mathrm{cm}^2$

$YZ = 0.27468$ cm

$LM^2+ZA_1^2 = 1.98235\ \mathrm{cm}^2$
$MN^2+ZA_1^2 = 1.92595\ \mathrm{cm}^2$
$NO^2+XY^2 = 1.98235\ \mathrm{cm}^2$
$OP^2+WX^2 = 1.98235\ \mathrm{cm}^2$
$PQ^2+VW^2 = 1.98235\ \mathrm{cm}^2$
$QR^2+UV^2 = 1.98235\ \mathrm{cm}^2$
$RS^2+TU^2 = 1.98235\ \mathrm{cm}^2$
$2\cdot ST^2 = 1.98235\ \mathrm{cm}^2$



Area $\triangle BIC = 10.94690\ \text{cm}^2$

Area $\triangle CJD = 8.79964\ \text{cm}^2$

Area $\triangle DKE = 5.86643\ \text{cm}^2$

Area $\triangle ELF = 2.93321\ \text{cm}^2$

Area $\triangle FMG = 0.78595\ \text{cm}^2$

Area $\triangle AHB = 11.73286\ \text{cm}^2$

(Area $\triangle BIC$)+(Area $\triangle FMG$) $= 11.73286\ \text{cm}^2$

(Area $\triangle CJD$)+(Area $\triangle ELF$) $= 11.73286\ \text{cm}^2$

$2\cdot$(Area $\triangle DKE$) $= 11.73286\ \text{cm}^2$

$AB = 2.48569\ \text{cm}$

$BC = 2.40099\ \text{cm}$

$CD = 2.15267\ \text{cm}$

$DE = 1.75765\ \text{cm}$

$EF = 1.24284\ \text{cm}$

$FG = 0.64334\ \text{cm}$

$AB^2 = 6.17864\ \text{cm}^2$

$BC^2 = 5.76475\ \text{cm}^2$

$CD^2 = 4.63398\ \text{cm}^2$

$DE^2 = 3.08932\ \text{cm}^2$

$EF^2 = 1.54466\ \text{cm}^2$

$FG^2 = 0.41389\ \text{cm}^2$

$AB^2 \cdot FG^2 = 2.55728\ \text{cm}^4$

$\frac{AB^2}{FG^2} - \frac{BC^2}{FG^2} = 1.00000$

$\frac{AB^2}{FG^2} = 14.92820$

$\frac{BC^2}{FG^2} = 13.92820$

$\frac{CD^2}{FG^2} = 11.19615$

$\frac{DE^2}{FG^2} = 7.46410$

$\frac{EF^2}{FG^2} = 3.73205$

$BC^2+FG^2 = 6.17864\ \text{cm}^2$

$CD^2+EF^2 = 6.17864\ \text{cm}^2$

$\frac{AB^2}{DE^2} = 2.00000$

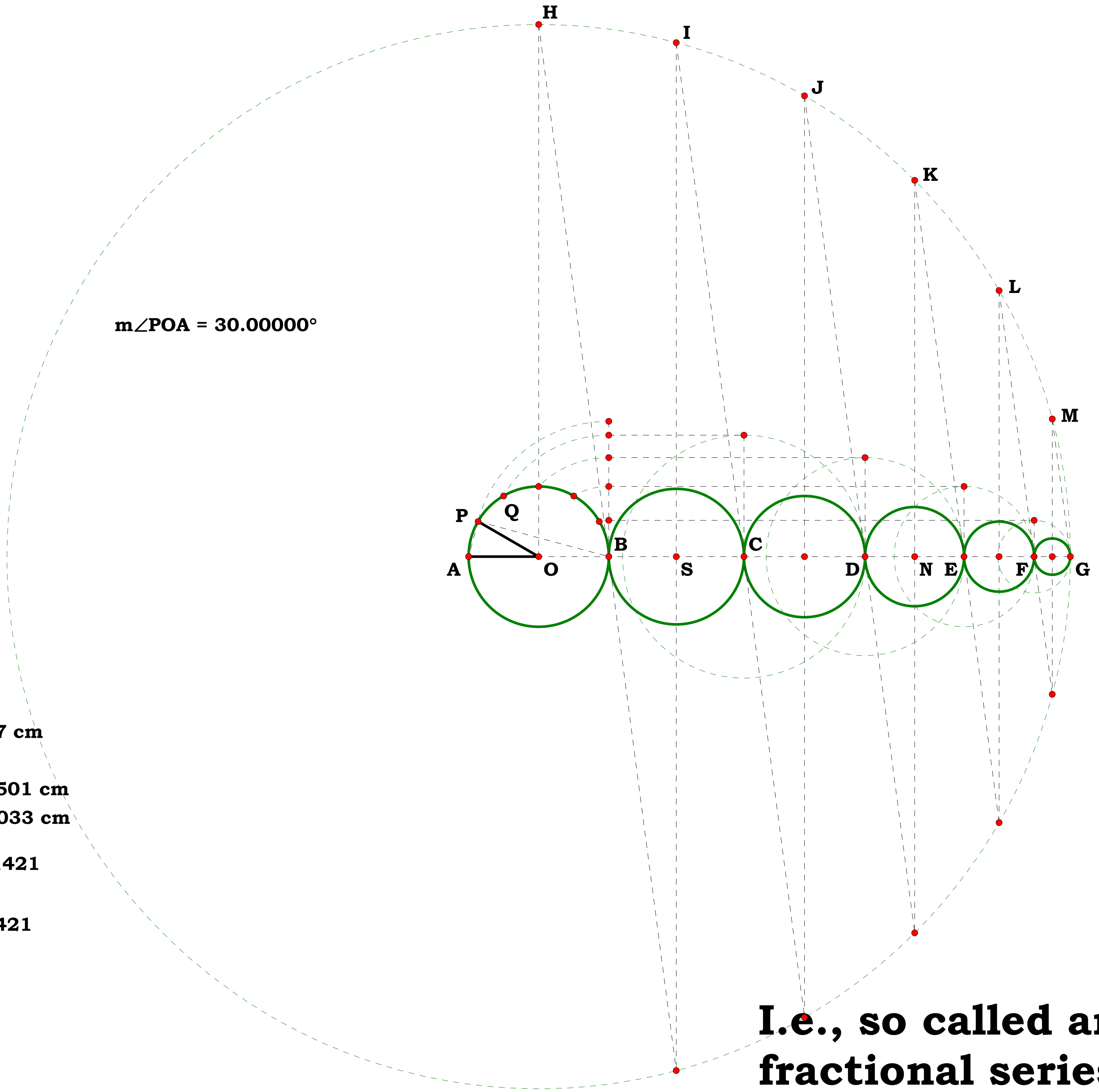
$AN = 7.91817\ \text{cm}$

$GN = 2.76501\ \text{cm}$

$GO = 9.44033\ \text{cm}$

$\frac{GO}{GN} = 3.41421$

$\sqrt{2} = 1.41421$



m∠POA = 30.00000°

AB = 2.48569 cm
BC = 2.40099 cm
CD = 2.15267 cm
DE = 1.75765 cm

EF = 1.24284 cm
QA = 1.24284 cm
FG = 0.64334 cm
PA = 0.64334 cm

$AB^2 = 6.17864\ cm^2$
$BC^2 = 5.76475\ cm^2$
$CD^2 = 4.63398\ cm^2$
$DE^2 = 3.08932\ cm^2$
$EF^2 = 1.54466\ cm^2$
$FG^2 = 0.41389\ cm^2$

$AB^2 \cdot FG^2 = 2.55728\ cm^4$

$\frac{AB^2}{FG^2} - \frac{BC^2}{FG^2} = 1.00000$

$\frac{AB^2}{FG^2} = 14.92820$

$\frac{BC^2}{FG^2} = 13.92820$

$\frac{CD^2}{FG^2} = 11.19615$

$\frac{DE^2}{FG^2} = 7.46410$

$\frac{EF^2}{FG^2} = 3.73205$

$BC^2+FG^2 = 6.17864\ cm^2$
$CD^2+EF^2 = 6.17864\ cm^2$

$\frac{AB^2}{DE^2} = 2.00000$

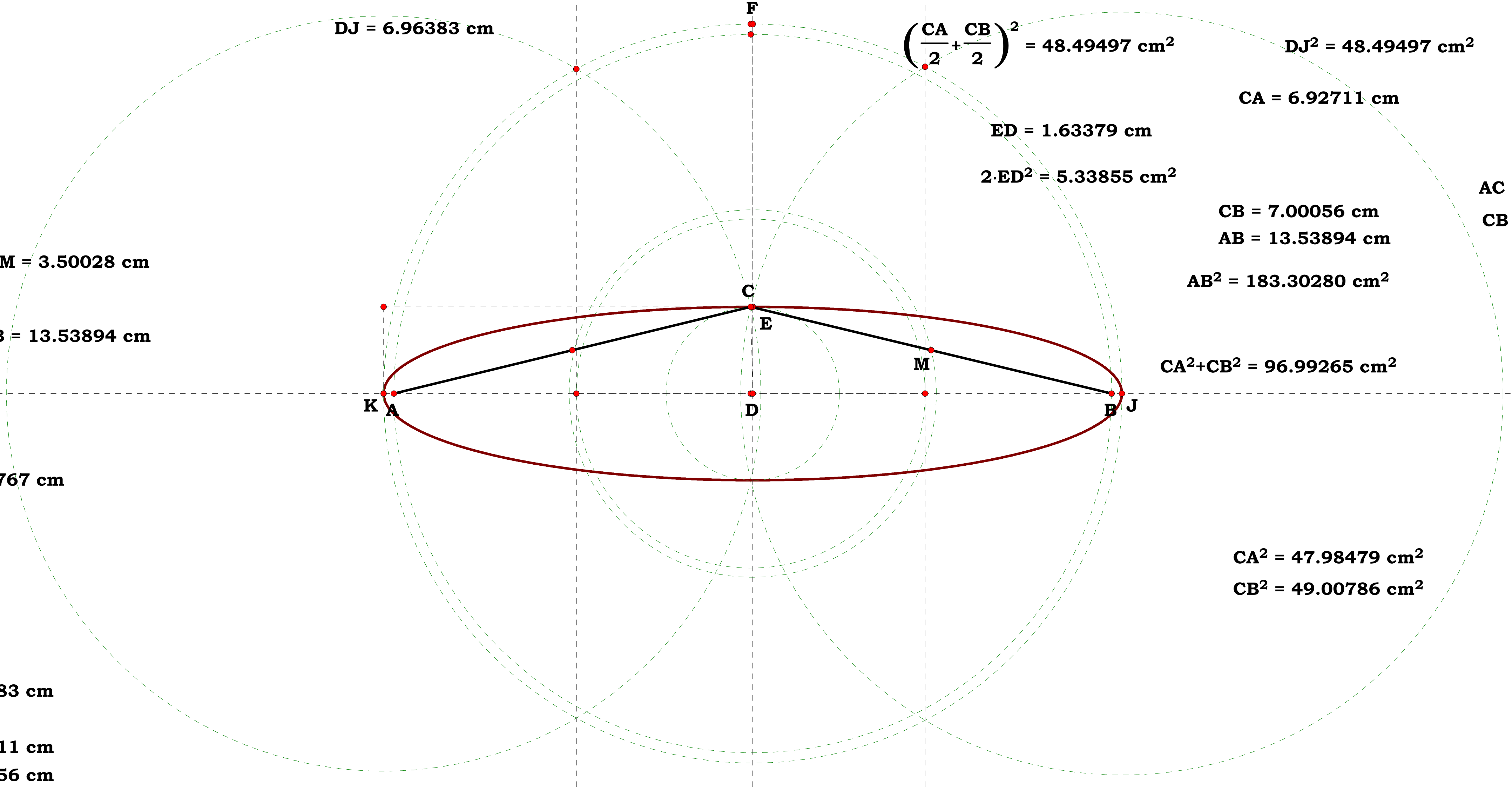
AN = 7.91817 cm

GN = 2.76501 cm
GO = 9.44033 cm

$\frac{GO}{GN} = 3.41421$

$\sqrt{2} = 1.41421$

I.e., so called angular division is also a fractional series. One can call fractional series elliptical functions.



DJ = 6.96383 cm

$\left(\frac{CA}{2}+\frac{CB}{2}\right)^2 = 48.49497\ \text{cm}^2$

$DJ^2 = 48.49497\ \text{cm}^2$

CA = 6.92711 cm

ED = 1.63379 cm

$2 \cdot ED^2 = 5.33855\ \text{cm}^2$

AC = 6.92711 cm

CB = 7.00056 cm

$\frac{AC}{CB} = 0.98951$

CB = 7.00056 cm

AB = 13.53894 cm

CM = 3.50028 cm

$AB^2 = 183.30280\ \text{cm}^2$

AB = 13.53894 cm

$CA^2+CB^2 = 96.99265\ \text{cm}^2$

KJ = 13.92767 cm

$CA^2 = 47.98479\ \text{cm}^2$

$CB^2 = 49.00786\ \text{cm}^2$

DF = 6.96383 cm

DE = 1.63379 cm

$\frac{DF}{DE} = 4.26238$

DF = 6.96383 cm

AC = 6.92711 cm

CB = 7.00056 cm

$\frac{AC+CB}{2} = 6.96383\ \text{cm}$

$\frac{AB}{2} = 6.76947\ \text{cm}$

$\sqrt{\frac{AC+CB}{2}^2-\frac{AB}{2}^2} = 1.63379\ \text{cm}$

DE = 1.63379 cm

$\sqrt{\frac{AC+CB}{2}^2-\frac{AB}{2}^2}-DE = 0.00000\ \text{cm}$

$\sqrt{\left(\frac{CA}{2}+\frac{CB}{2}\right)^2} = 6.96383\ \text{cm}$

EB = 6.96383 cm

DJ = 6.96383 cm

DJ = 6.96383 cm

AC = 6.92711 cm

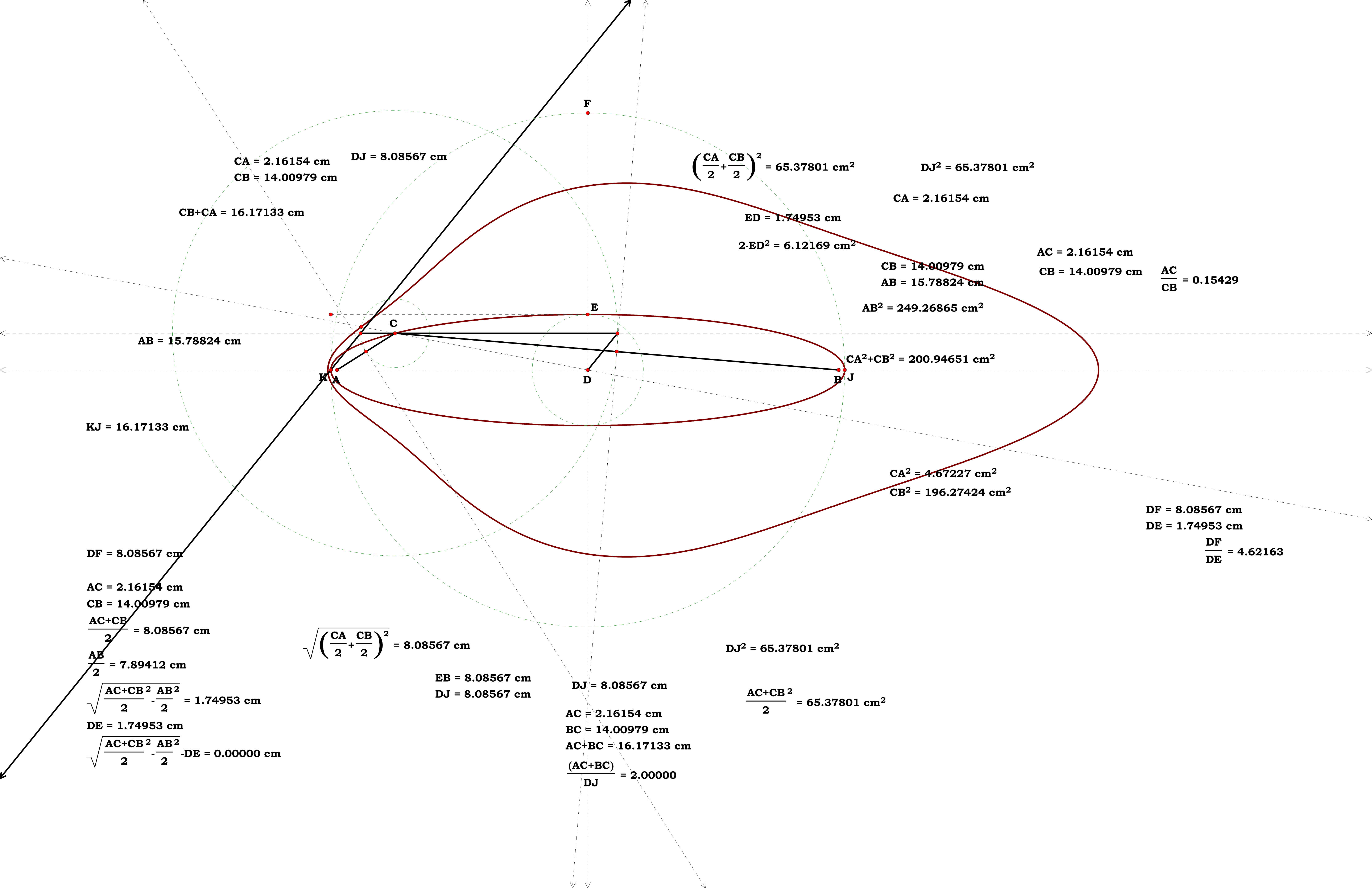
BC = 7.00056 cm

AC+BC = 13.92767 cm

$\frac{(AC+BC)}{DJ} = 2.00000$

$DJ^2 = 48.49497\ \text{cm}^2$

$\frac{AC+CB}{2}^2 = 48.49497\ \text{cm}^2$


F
CA = 2.16154 cm
CB = 14.00979 cm
DJ = 8.08567 cm
$\left(\frac{CA}{2}+\frac{CB}{2}\right)^2$ = 65.37801 cm^2
DJ^2 = 65.37801 cm^2
CB+CA = 16.17133 cm
CA = 2.16154 cm
ED = 1.74953 cm
2·ED^2 = 6.12169 cm^2
AC = 2.16154 cm
CB = 14.00979 cm
$\frac{AC}{CB}$ = 0.15429
CB = 14.00979 cm
AB = 15.78824 cm
AB^2 = 249.26865 cm^2
E
C
AB = 15.78824 cm
CA^2+CB^2 = 200.94651 cm^2
K
A
D
B
J
KJ = 16.17133 cm
CA^2 = 4.67227 cm^2
CB^2 = 196.27424 cm^2
DF = 8.08567 cm
DE = 1.74953 cm
$\frac{DF}{DE}$ = 4.62163
DF = 8.08567 cm
AC = 2.16154 cm
CB = 14.00979 cm
$\frac{AC+CB}{2}$ = 8.08567 cm
$\sqrt{\left(\frac{CA}{2}+\frac{CB}{2}\right)^2}$ = 8.08567 cm
$\frac{AB}{2}$ = 7.89412 cm
DJ^2 = 65.37801 cm^2
EB = 8.08567 cm
DJ = 8.08567 cm
DJ = 8.08567 cm
$\sqrt{\frac{AC+CB}{2}^2-\frac{AB}{2}^2}$ = 1.74953 cm
$\frac{AC+CB}{2}^2$ = 65.37801 cm^2
DE = 1.74953 cm
AC = 2.16154 cm
BC = 14.00979 cm
AC+BC = 16.17133 cm
$\sqrt{\frac{AC+CB}{2}^2-\frac{AB}{2}^2}$-DE = 0.00000 cm
$\frac{(AC+BC)}{DJ}$ = 2.00000

Introduction to Fractional Series.

Fractional series created where the starting value is N_1/N_2

Option Base of Index is 0.

$$\frac{N_1}{N_2\text{-}0} = 1.33333$$

$$\frac{N_1}{N_2\text{-}1} = 1.60579$$

$$\frac{N_1}{N_2\text{-}2} = 2.01818$$

$$\frac{A}{N_1} = 0.16967$$

$$\frac{B}{N_1} = 0.20434$$

$$\frac{C}{N_1} = 0.25682$$

$$\frac{D}{N_1} = 0.34557$$

$$\frac{1}{N_2\text{-}0} = 0.16967$$

$$\frac{1}{N_2\text{-}1} = 0.20434$$

$$\frac{1}{N_2\text{-}2} = 0.25682$$

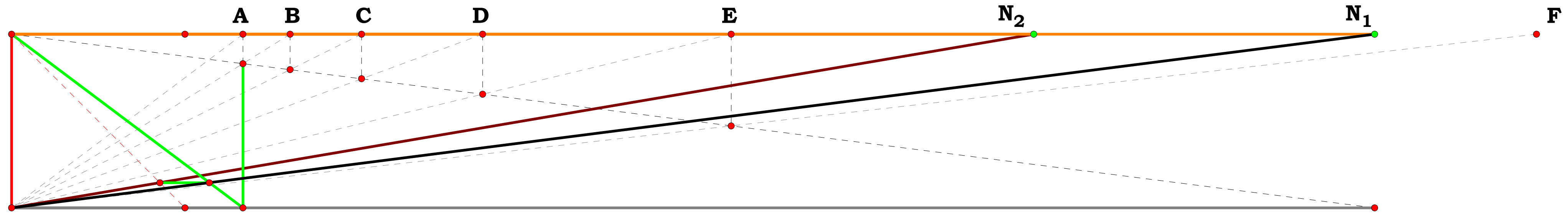
$$\frac{1}{N_2\text{-}3} = 0.34557$$

$$\frac{\frac{N_1}{N_2\text{-}0}}{\frac{1}{N_2\text{-}0}} = 7.85840$$

$$\frac{\frac{N_1}{N_2\text{-}1}}{\frac{1}{N_2\text{-}1}} = 7.85840$$

$N_2\text{-}I_1 = -0.10620$

$I_1 = 6$



$N_1 = 7.85840$

$N_2 = 5.89380$

$$\frac{N_1}{N_2} = 1.33333$$

$$\frac{N_1}{N_2}\text{-}A = 0.00000$$

$$\frac{1}{(N_2\text{-}I_1)} = -9.41627$$

$$\frac{1}{(N_2\text{-}I_1)}\cdot N_1 = -73.99685$$

A = 1.33333

B = 1.60579

C = 2.01818

D = 2.71560

E = 4.14954

F = 8.79212

Option Base of Index is 0.

$N_1 = 7.15170$ $I_1 = 0$

$N_2 = 3.00000$

$N_3 = 2.00000$

$N_1 \cdot N_3 + N_1 = 21.45511$

$N_2 \cdot N_3 + N_2 = 9.00000$

Total number of indexes.

$(N_3+1) \cdot (N_2-1) = 6.00000$

$iT_1 = 6$

Fraction at last index.

$$\frac{N_1 \cdot N_3 + N_1}{(N_2 \cdot N_3 + N_2) - iT_1} = 7.15170$$

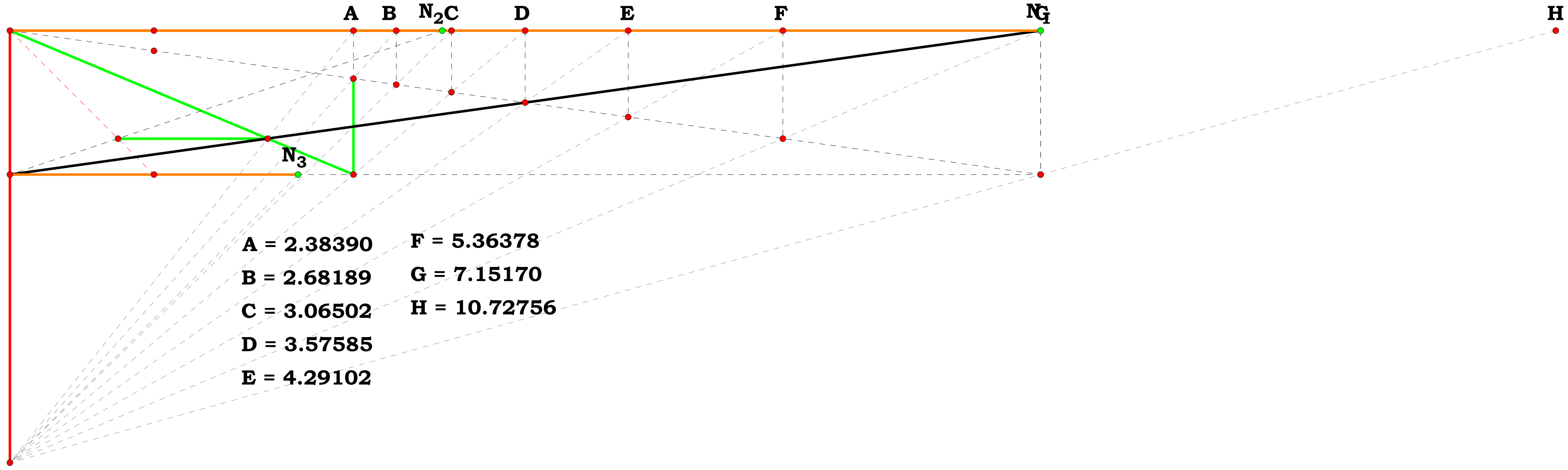
$$\frac{N_1 \cdot N_3 + N_1}{(N_2 \cdot N_3 + N_2) - iT_1} - N_1 = 0.00000$$

Starting Fraction.

$$\frac{(N_1 \cdot N_3 + N_1)}{(N_2 \cdot N_3 + N_2)} = 2.38390$$

Fraction at index

$$\frac{N_1 \cdot N_3 + N_1}{(N_2 \cdot N_3 + N_2) - I_1} = 2.38390$$



A = 2.38390
B = 2.68189
C = 3.06502
D = 3.57585
E = 4.29102
F = 5.36378
G = 7.15170
H = 10.72756

Fractional series where the starting value is N_1N_2/N_1N_2.

$\frac{N_1}{A}$ = 6.72867

$\frac{N_1}{B}$ = 5.58294

$\frac{N_1}{C}$ = 4.43720

$\frac{N_1}{D}$ = 3.29147

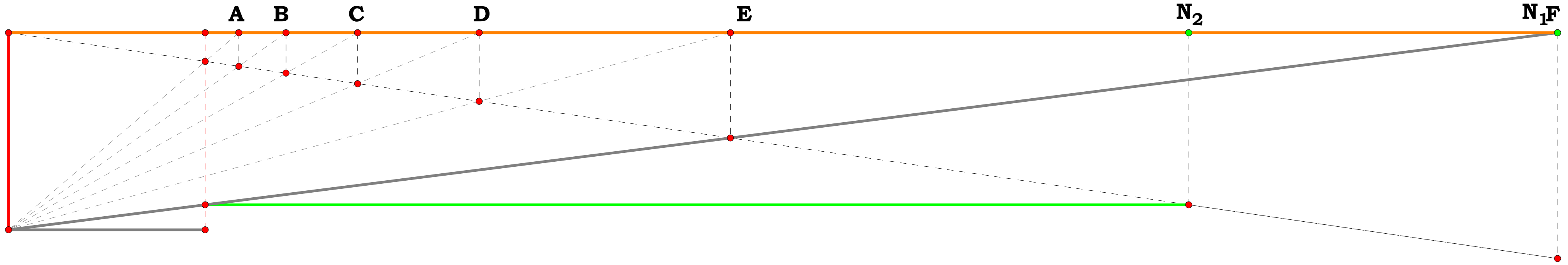
$\frac{N_1}{E}$ = 2.14573

$\frac{N_1}{F}$ = 1.00000

Option Base of Index is 1

N_1 = 7.87441
N_2 = 6.00000

$\frac{N_1 \cdot N_2}{N_1 \cdot N_2}$ = 1.00000



I_1 = 1

$\frac{(N_1 \cdot N_2)}{(N_1 \cdot N_2 - I_1 \cdot (N_1 - 1))}$ = 1.17028

$N_1 \cdot N_2$ = 47.24644

$N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)$ = 40.37203

$\frac{(N_1 \cdot N_2)}{(N_1 \cdot N_2)}$ = 1.00000

A = 1.17028
B = 1.41044
C = 1.77463
D = 2.39237
E = 3.66980

F = 7.87441

Starting values. See previous plate.

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2} = 1.00000 \qquad \frac{N_1 \cdot N_3}{N_1 \cdot N_3} = 1.00000$$

$N_2 \cdot N_3 = 40.00000$

$N_2 - N_3 = 3.00000$

Option Base of Index is 1

$N_1 = 6.78917$

$N_2 = 8.00000$

$N_3 = 5.00000$

$I_1 = 1$

Total Number of Indexs.

$$\frac{N_2 \cdot N_3}{N_2 - N_3} = 13.33333 \qquad iT_1 = 13.33333$$

Fraction at Index.

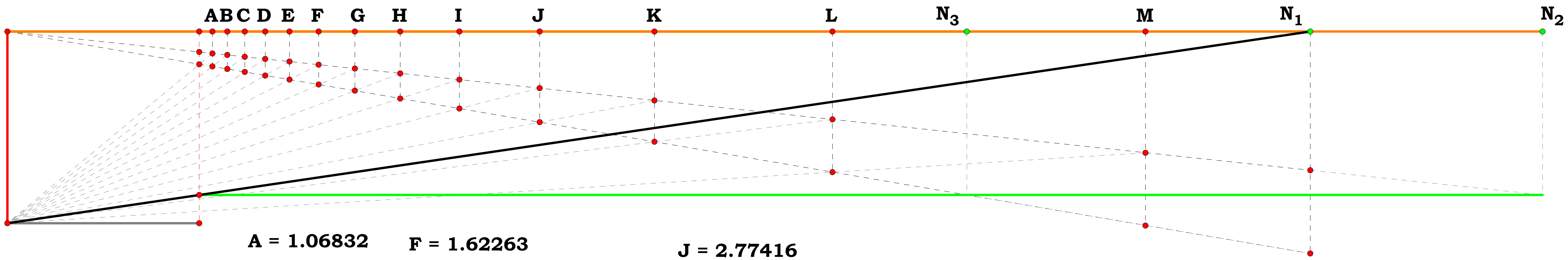
$$\frac{N_1 \cdot N_2 \cdot N_3}{N_1 \cdot N_2 \cdot N_3 - I_1 \cdot (N_1 - 1) \cdot (N_2 - N_3)} = 1.06832$$

N_1 minus last index.

$$\frac{N_1 \cdot N_2 \cdot N_3}{N_1 \cdot N_2 \cdot N_3 - iT_1 \cdot (N_1 - 1) \cdot (N_2 - N_3)} - N_1 = 0.00000$$

Number of times fraction at index divides N_1

$$\frac{N_1 \cdot (N_1 \cdot N_2 \cdot N_3 - I_1 \cdot (N_1 - 1) \cdot (N_2 - N_3))}{N_1 \cdot N_2 \cdot N_3} = 6.35499$$



A = 1.06832
B = 1.14667
C = 1.23741
D = 1.34375
E = 1.47008

F = 1.62263
G = 1.81052
H = 2.04760
I = 2.35614

J = 2.77416
K = 3.37249
L = 4.29989
M = 5.93081

Fractional Geometric Series.
Plate 1.

Index is Base 0

Index: $I_{ndx} = 0$

Number of div. at an index. $N_b - \frac{I_{ndx}}{N_a} = 5.00000$

Number of div. by difference at an index.

$$\frac{(I_{ndx} - N_a \cdot N_b) \cdot ((I_{ndx} - N_a \cdot N_b) + 1)}{N_a} = 45.0000$$

Total number of fractions.

$N_a \cdot N_b - N_a = 8.00000$

$\frac{\text{numerator}}{\text{denominator}} = 2.00000$

numerator = 2.00000

denominator = 1.00000

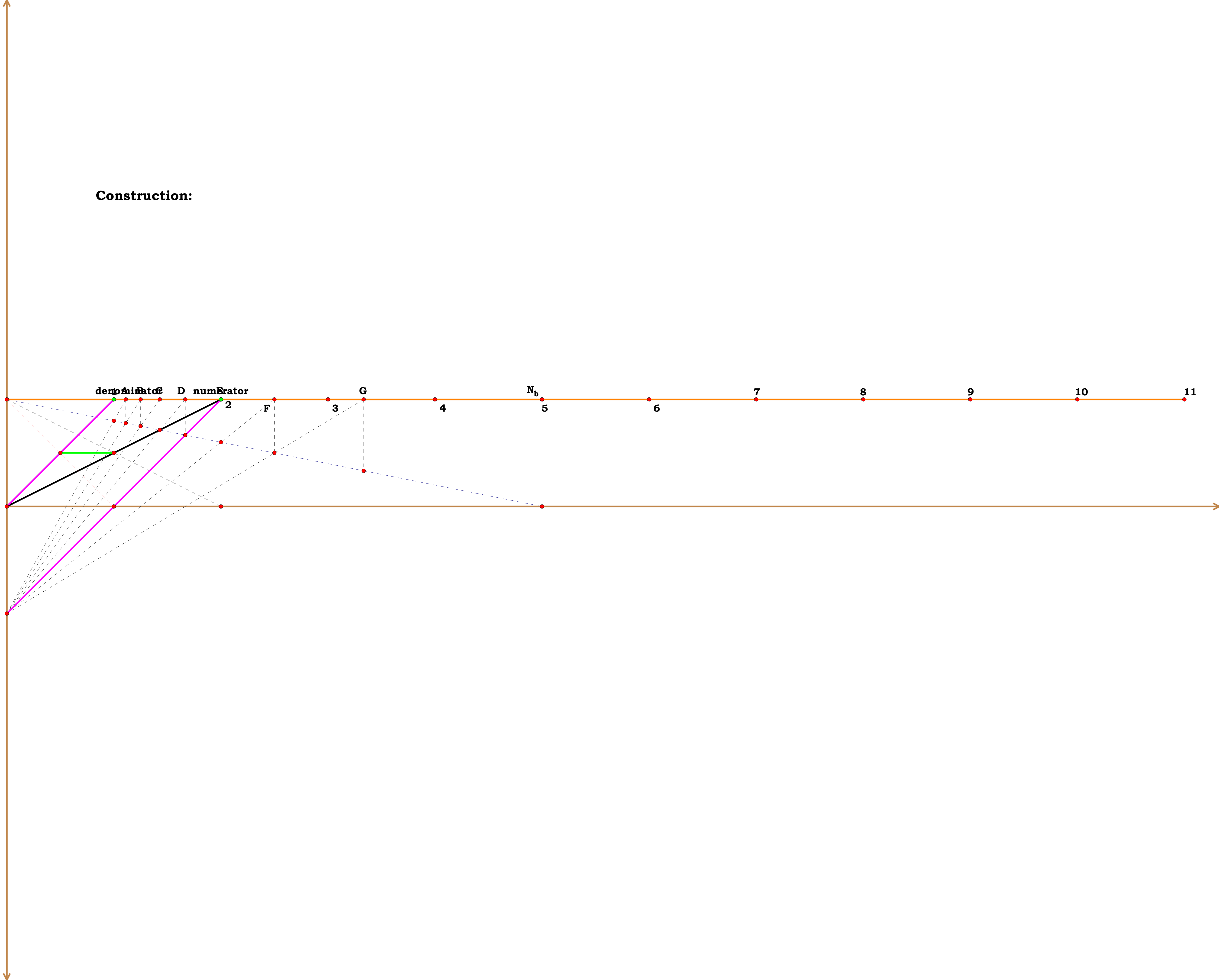
$N_a = 2.00000$

$N_b = 5.00000$

num	den	
N[1] -> 0	N[3] -> 0	N[2] -> 0
N[1] -> 1	N[3] -> 1	N[2] -> 1
N[1] -> 2	N[3] -> 2	N[2] -> 2
N[1] -> 3	N[3] -> 3	N[2] -> 3
N[1] -> 4	N[3] -> 4	N[2] -> 4
N[1] -> 5	N[3] -> 5	N[2] -> 5
N[1] -> 6	N[3] -> 6	N[2] -> 6
N[1] -> 7	N[3] -> 7	N[2] -> 7
N[1] -> 8	N[3] -> 8	N[2] -> 8
N[1] -> 9	N[3] -> 9	N[2] -> 9
N[1] -> 10	N[3] -> 10	N[2] -> 10
N[1] -> 11	N[3] -> 11	N[2] -> 11

Hide Intersection

Construction:



Index is Base 0

Index: $I_{ndx} = 1$

Number of div. at an index. $N_b - \frac{I_{ndx}}{N_a} = 10.54545$

Number of div. by difference at an index.

$$\frac{(I_{ndx}-N_a \cdot N_b)\cdot((I_{ndx}-N_a \cdot N_b)+1)}{N_a} = 234.1091$$

Total number of fractions.

$N_a \cdot N_b - N_a = 22.00000$

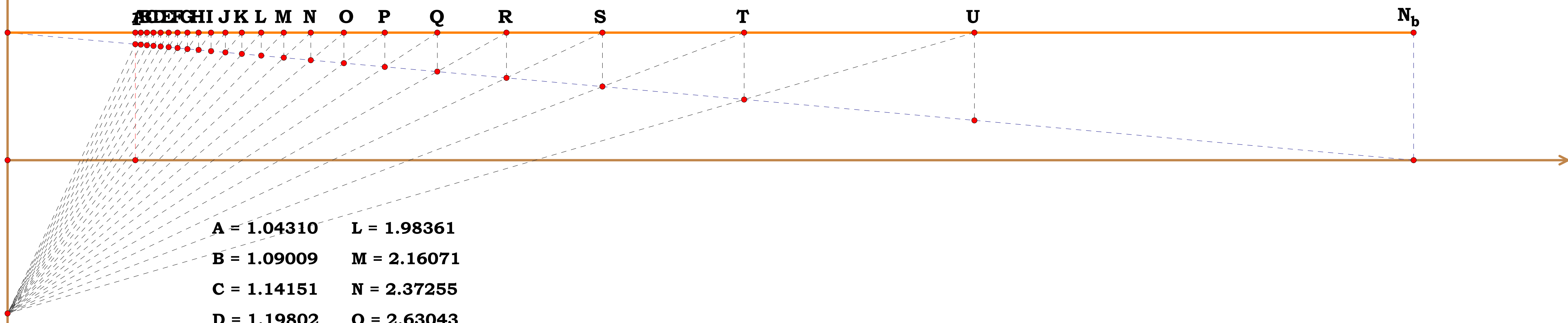
$\frac{N_b}{1} = 11.00000$
$\frac{N_b}{A} = 10.54545$
$\frac{N_b}{B} = 10.09091$
$\frac{N_b}{C} = 9.63636$
$\frac{N_b}{D} = 9.18182$
$\frac{N_b}{E} = 8.72727$
$\frac{N_b}{F} = 8.27273$
$\frac{N_b}{G} = 7.81818$

$\frac{N_b}{H} = 7.36364$
$\frac{N_b}{I} = 6.90909$
$\frac{N_b}{J} = 6.45455$
$\frac{N_b}{K} = 6.00000$
$\frac{N_b}{L} = 5.54545$
$\frac{N_b}{M} = 5.09091$
$\frac{N_b}{N} = 4.63636$
$\frac{N_b}{O} = 4.18182$

$\frac{N_b}{P} = 3.72727$
$\frac{N_b}{Q} = 3.27273$
$\frac{N_b}{R} = 2.81818$
$\frac{N_b}{S} = 2.36364$
$\frac{N_b}{T} = 1.90909$
$\frac{N_b}{U} = 1.45455$

$\frac{116}{11} = 10.54545$
$\frac{111}{11} = 10.09091$
$\frac{106}{11} = 9.63636$
$\frac{101}{11} = 9.18182$

Present 2 Actions



$\frac{\text{numerator}}{\text{denominator}} = 2.20000$
numerator = 11.00000
denominator = 5.00000

$N_a = 2.20000$
$N_b = 11.00000$

num	den
N[1] -> 0	N[3] -> 0
N[1] -> 1	N[3] -> 1
N[1] -> 2	N[3] -> 2
N[1] -> 3	N[3] -> 3
N[1] -> 4	N[3] -> 4
N[1] -> 5	N[3] -> 5
N[1] -> 6	N[3] -> 6
N[1] -> 7	N[3] -> 7
N[1] -> 8	N[3] -> 8
N[1] -> 9	N[3] -> 9
N[1] -> 10	N[3] -> 10
N[1] -> 11	N[3] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

A = 1.04310
B = 1.09009
C = 1.14151
D = 1.19802
E = 1.26042
F = 1.32967
G = 1.40698
H = 1.49383
I = 1.59211
J = 1.70423
K = 1.83333

L = 1.98361
M = 2.16071
N = 2.37255
O = 2.63043
P = 2.95122
Q = 3.36111
R = 3.90323
S = 4.65385
T = 5.76190
U = 7.56250

Show Intersection

Index is Base 0

$I_{ndx} = 0$

$N_b - \frac{I_{ndx}}{N_a} = 11.00000$

$\frac{(I_{ndx} - N_a \cdot N_b) \cdot ((I_{ndx} - N_a \cdot N_b) + 1)}{N_a} = 110.0000$

$N_a \cdot N_b - N_a = 10.00000$

Present 2 Actions

$\frac{\text{numerator}}{\text{denominator}} = 1.00000$

numerator = 1.00000

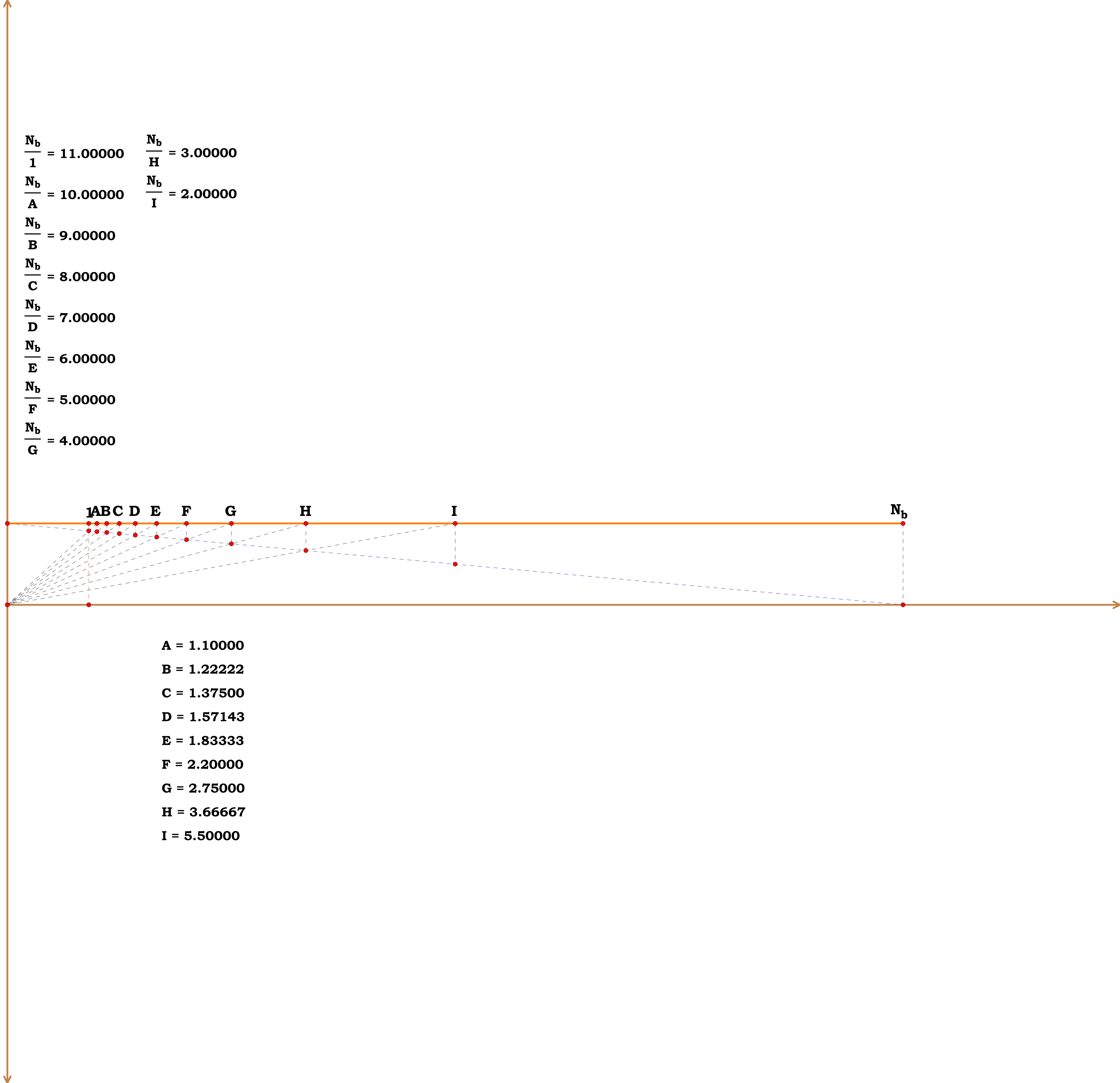
denominator = 1.00000

$N_a = 1.00000$

$N_b = 11.00000$

num	den	
N[1] -> 0	N[3] -> 0	N[2] -> 0
N[1] -> 1	N[3] -> 1	N[2] -> 1
N[1] -> 2	N[3] -> 2	N[2] -> 2
N[1] -> 3	N[3] -> 3	N[2] -> 3
N[1] -> 4	N[3] -> 4	N[2] -> 4
N[1] -> 5	N[3] -> 5	N[2] -> 5
N[1] -> 6	N[3] -> 6	N[2] -> 6
N[1] -> 7	N[3] -> 7	N[2] -> 7
N[1] -> 8	N[3] -> 8	N[2] -> 8
N[1] -> 9	N[3] -> 9	N[2] -> 9
N[1] -> 10	N[3] -> 10	N[2] -> 10
N[1] -> 11	N[3] -> 11	N[2] -> 11

Show Intersection



$\frac{N_b}{1} = 11.00000$

$\frac{N_b}{A} = 10.00000$

$\frac{N_b}{B} = 9.00000$

$\frac{N_b}{C} = 8.00000$

$\frac{N_b}{D} = 7.00000$

$\frac{N_b}{E} = 6.00000$

$\frac{N_b}{F} = 5.00000$

$\frac{N_b}{G} = 4.00000$

$\frac{N_b}{H} = 3.00000$

$\frac{N_b}{I} = 2.00000$

A = 1.10000

B = 1.22222

C = 1.37500

D = 1.57143

E = 1.83333

F = 2.20000

G = 2.75000

H = 3.66667

I = 5.50000

Index is Base 0

$I_{ndx} = 0$

$N_b - \frac{I_{ndx}}{N_a} = 7.00000$

$\frac{(I_{ndx} - N_a \cdot N_b) \cdot ((I_{ndx} - N_a \cdot N_b) + 1)}{N_a} = 42.0000$

$N_a \cdot N_b - N_a = 6.00000$

$\frac{N_b}{1} = 7.00000$

$\frac{N_b}{A} = 6.00000$

$\frac{N_b}{B} = 5.00000$

$\frac{N_b}{C} = 4.00000$

$\frac{N_b}{D} = 3.00000$

$\frac{N_b}{E} = 2.00000$

$\frac{N_b}{F} = 1.00000$

Present 2 Actions

Present 2 Actions

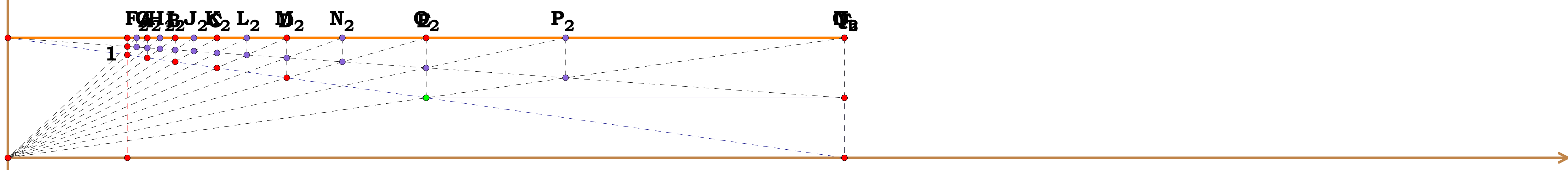
$\frac{\text{numerator}}{\text{denominator}} = 1.00000$

numerator = 1.00000

denominator = 1.00000

$N_a = 1.00000$

$N_b = 7.00000$



num	den		
N[1] -> 0	N[3] -> 0		N[2] -> 0
N[1] -> 1	N[3] -> 1		N[2] -> 1
N[1] -> 2	N[3] -> 2	Home Point	N[2] -> 2
N[1] -> 3	N[3] -> 3	A Point	N[2] -> 3
N[1] -> 4	N[3] -> 4	B Point	N[2] -> 4
N[1] -> 5	N[3] -> 5	C Point	N[2] -> 5
N[1] -> 6	N[3] -> 6	D Point	N[2] -> 6
N[1] -> 7	N[3] -> 7	E Point	N[2] -> 7
N[1] -> 8	N[3] -> 8	F Point	N[2] -> 8
N[1] -> 9	N[3] -> 9		N[2] -> 9
N[1] -> 10	N[3] -> 10		N[2] -> 10
N[1] -> 11	N[3] -> 11		N[2] -> 11

Show Intersection

$\frac{N_b}{F_2} = 6.50000$

$\frac{N_b}{G_2} = 6.00000$

$\frac{N_b}{H_2} = 5.50000$

$\frac{N_b}{I_2} = 5.00000$

$\frac{N_b}{J_2} = 4.50000$

$\frac{N_b}{K_2} = 4.00000$

$\frac{N_b}{L_2} = 3.50000$

$\frac{N_b}{M_2} = 3.00000$

$\frac{N_b}{N_2} = 2.50000$

$\frac{N_b}{O_2} = 2.00000$

$\frac{N_b}{P_2} = 1.50000$

$\frac{N_b}{Q_2} = 1.00000$

$F_2 = 1.07692$

$G_2 = 1.16667$

$H_2 = 1.27273$

$I_2 = 1.40000$

$J_2 = 1.55556$

$K_2 = 1.75000$

$L_2 = 2.00000$

$M_2 = 2.33333$

$N_2 = 2.80000$

$O_2 = 3.50000$

$P_2 = 4.66667$

$Q_2 = 7.00000$

Recursive division using the first series points on the operational tail.

Index is Base 0

$I_{ndx} = 0$

$N_b - \frac{I_{ndx}}{N_a} = 7.00000$

$\frac{(I_{ndx}-N_a \cdot N_b)\cdot((I_{ndx}-N_a \cdot N_b)+1)}{N_a} = 42.0000$

$N_a \cdot N_b - N_a = 6.00000$

$\frac{N_b}{1} = 7.00000$

$\frac{N_b}{A} = 6.00000$

$\frac{N_b}{B} = 5.00000$

$\frac{N_b}{C} = 4.00000$

$\frac{N_b}{D} = 3.00000$

$\frac{N_b}{E} = 2.00000$

$\frac{N_b}{F} = 1.00000$

Present 2 Actions

Present 2 Actions

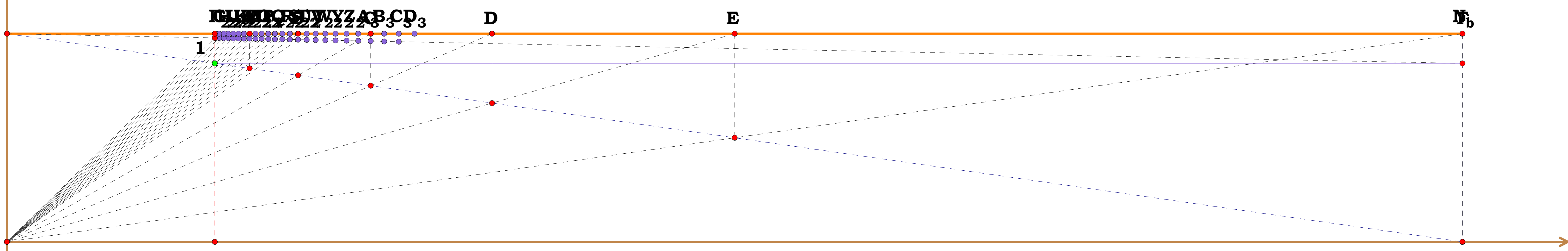
$\frac{numerator}{denominator} = 1.00000$

numerator = 1.00000

denominator = 1.00000

$N_a = 1.00000$

$N_b = 7.00000$



num

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

den

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

Home Point
A Point
B Point
C Point
D Point
E Point
F Point

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

$\frac{N_b}{F_2} = 6.85714$

$\frac{N_b}{G_2} = 6.71429$

$\frac{N_b}{H_2} = 6.57143$

$\frac{N_b}{I_2} = 6.42857$

$\frac{N_b}{J_2} = 6.28571$

$\frac{N_b}{K_2} = 6.14286$

$\frac{N_b}{L_2} = 6.00000$

$\frac{N_b}{M_2} = 5.85714$

$\frac{N_b}{N_2} = 5.71429$

$\frac{N_b}{O_2} = 5.57143$

$\frac{N_b}{P_2} = 5.42857$

$\frac{N_b}{Q_2} = 5.28571$

$\frac{N_b}{R_2} = 5.14286$

$\frac{N_b}{S_2} = 5.00000$

$\frac{N_b}{T_2} = 4.85714$

$\frac{N_b}{U_2} = 4.71429$

$\frac{N_b}{V_2} = 4.57143$

$\frac{N_b}{W_2} = 4.42857$

$\frac{N_b}{Y_2} = 4.28571$

$\frac{N_b}{Z_2} = 4.14286$

$\frac{N_b}{A_3} = 4.00000$

$\frac{N_b}{B_3} = 3.85714$

$\frac{N_b}{C_3} = 3.71429$

$\frac{N_b}{D_3} = 3.57143$

$F_2 = 1.02083$
$G_2 = 1.04255$
$H_2 = 1.06522$
$I_2 = 1.08889$
$J_2 = 1.11364$
$K_2 = 1.13953$
$L_2 = 1.16667$
$M_2 = 1.19512$
$N_2 = 1.22500$

$O_2 = 1.25641$
$P_2 = 1.28947$
$Q_2 = 1.32432$
$R_2 = 1.36111$
$S_2 = 1.40000$
$T_2 = 1.44118$
$U_2 = 1.48485$
$V_2 = 1.53125$
$W_2 = 1.58065$

$Y_2 = 1.63333$
$Z_2 = 1.68966$
$A_3 = 1.75000$
$B_3 = 1.81481$
$C_3 = 1.88462$
$D_3 = 1.96000$

Recursive division using the first series points on the operational tail.

Show Intersection

Fractional Geometric Series.
Plate 2.

Construction:

Index = 1

Frac. mult. $\frac{(1-N_2)\cdot Index+N_1\cdot N_2\cdot N_3}{N_1\cdot N_3} = 6.74335$

# of fracs. $N_1\cdot N_3 = 8.00000$

len of frac. $\frac{N_1\cdot N_2\cdot N_3}{N_1\cdot N_2\cdot N_3-Index\cdot(N_2-1)} = 1.12167$

num of div. for frac. $\frac{(Index\cdot(1-N_2)+N_1\cdot N_2\cdot N_3)\cdot((N_2+Index\cdot(1-N_2)+N_1\cdot N_2\cdot N_3)-1)}{N_1\cdot N_3\cdot(N_2-1)} = 62.16558$

$N_1 = 4.00000$

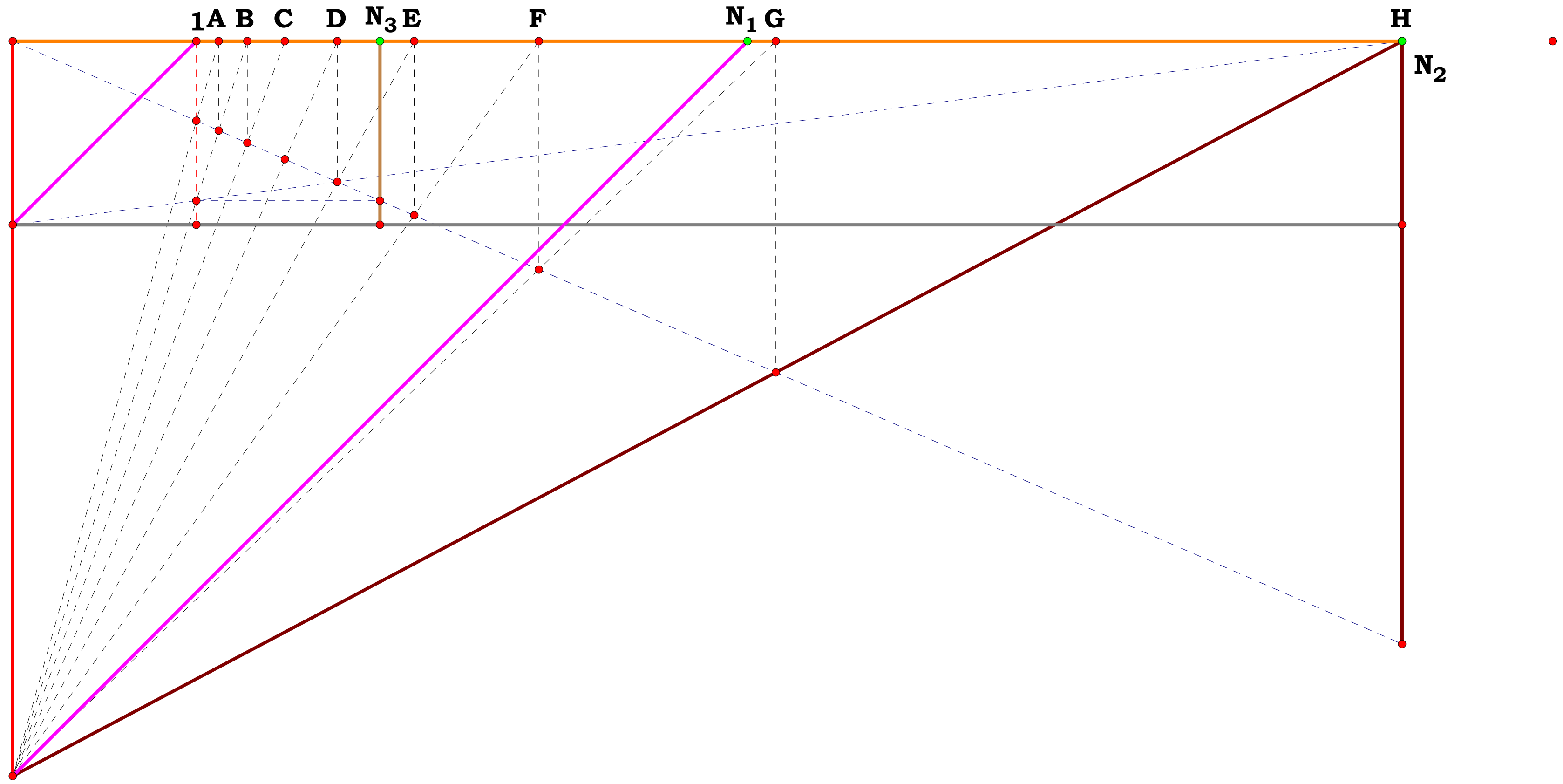
$N_3 = 2.00000$

$N_2 = 7.56383$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11



$\frac{N_2}{1} = 6.76866$

$\frac{N_2}{A} = 6.38408$

$\frac{N_2}{B} = 5.99950$

$\frac{N_2}{C} = 5.61492$

$\frac{N_2}{D} = 5.23035$

$\frac{N_2}{E} = 4.84577$

$\frac{N_2}{F} = 4.46119$

$\frac{N_2}{G} = 4.07662$

$\frac{N_2}{H} = 3.69204$

$\frac{N_2}{I} = 3.30746$

$\frac{N_2}{J} = 2.92289$

$\frac{N_2}{K} = 2.53831$

$\frac{N_2}{L} = 2.15373$

$\frac{N_2}{M} = 1.76915$

$\frac{N_2}{N} = 1.38458$

$\frac{N_2}{O} = 1.00000$

Index = 1

Frac. mult. $\frac{(1-N_2)\cdot Index+N_1\cdot N_2\cdot N_3}{N_1\cdot N_3} = 6.38408$

# of fracs. $N_1\cdot N_3 = 15.00000$

len of frac. $\frac{N_1\cdot N_2\cdot N_3}{N_1\cdot N_2\cdot N_3-Index\cdot(N_2-1)} = 1.06024$

$\frac{N_2}{A-1} = 112.36144$

num of div. for frac. $\frac{(Index\cdot(1-N_2)+N_1\cdot N_2\cdot N_3)\cdot((N_2+Index\cdot(1-N_2)+N_1\cdot N_2\cdot N_3)-1)}{N_1\cdot N_3\cdot(N_2-1)} = 112.36144$

$N_1 = 3.00000$

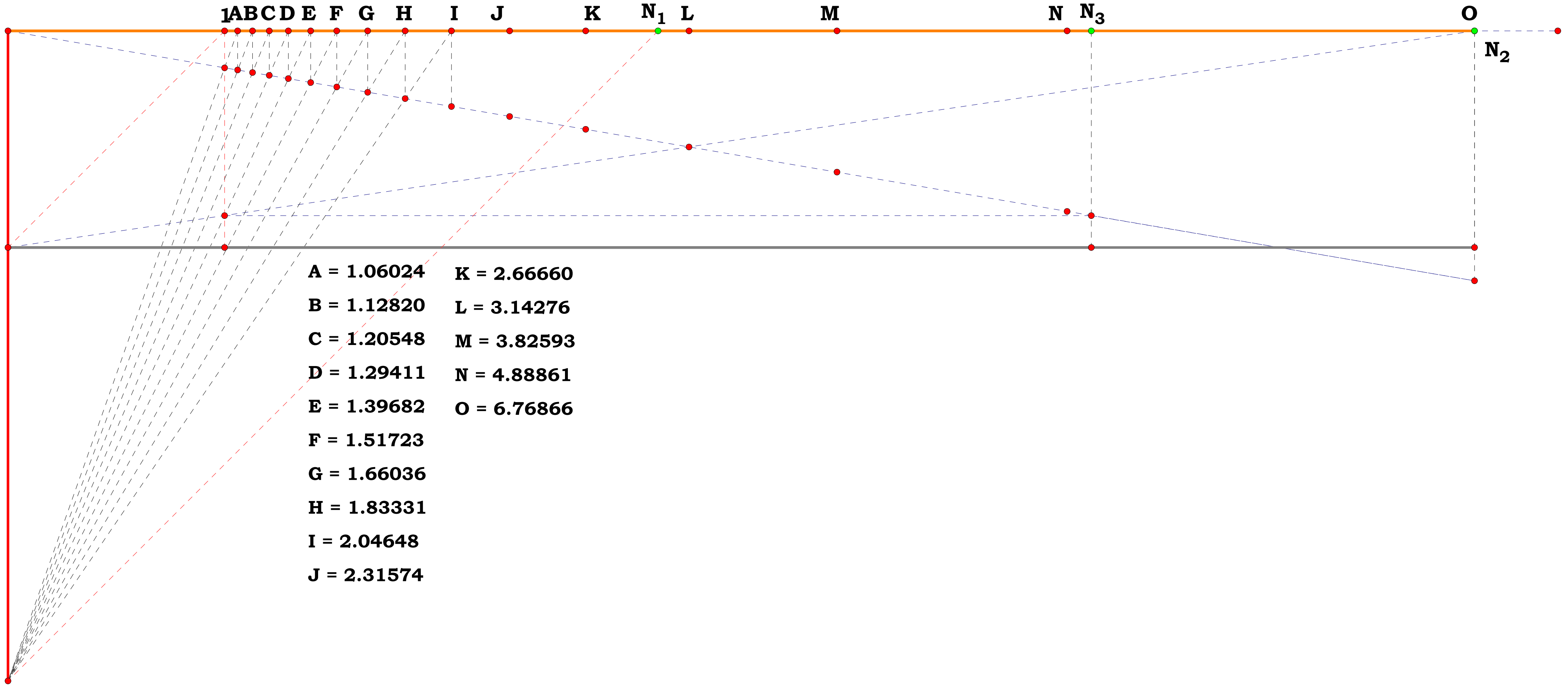
$N_3 = 5.00000$

$N_2 = 6.76866$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

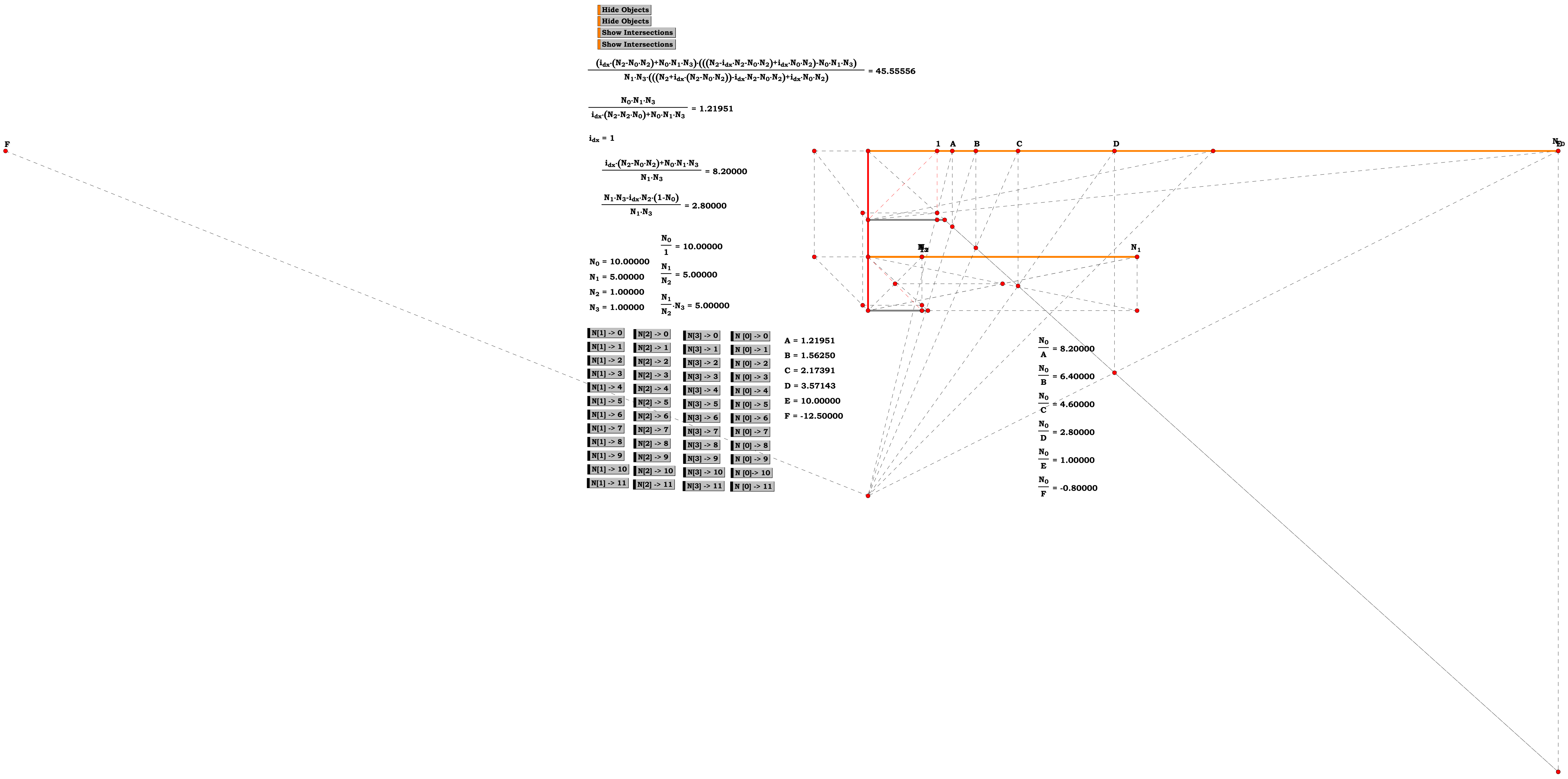
N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11



A = 1.06024
B = 1.12820
C = 1.20548
D = 1.29411
E = 1.39682
F = 1.51723
G = 1.66036
H = 1.83331
I = 2.04648
J = 2.31574

K = 2.66660
L = 3.14276
M = 3.82593
N = 4.88861
O = 6.76866

Fractional Geometric Series.
Plate 3.



$$\frac{(i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3)\cdot(((N_2-i_{dx}\cdot N_2-N_0\cdot N_2)+i_{dx}\cdot N_0\cdot N_2)-N_0\cdot N_1\cdot N_3)}{N_1\cdot N_3\cdot(((N_2+i_{dx}\cdot(N_2-N_0\cdot N_2))-i_{dx}\cdot N_2-N_0\cdot N_2)+i_{dx}\cdot N_0\cdot N_2)} = 45.55556$$

$$\frac{N_0\cdot N_1\cdot N_3}{i_{dx}\cdot(N_2-N_2\cdot N_0)+N_0\cdot N_1\cdot N_3} = 1.21951$$

$i_{dx} = 1$

$$\frac{i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3}{N_1\cdot N_3} = 8.20000$$

$$\frac{N_1\cdot N_3-i_{dx}\cdot N_2\cdot(1-N_0)}{N_1\cdot N_3} = 2.80000$$

$N_0 = 10.00000$
$N_1 = 5.00000$
$N_2 = 1.00000$
$N_3 = 1.00000$

$$\frac{N_0}{1} = 10.00000$$

$$\frac{N_1}{N_2} = 5.00000$$

$$\frac{N_1}{N_2}\cdot N_3 = 5.00000$$

A = 1.21951
B = 1.56250
C = 2.17391
D = 3.57143
E = 10.00000
F = -12.50000

$$\frac{N_0}{A} = 8.20000$$

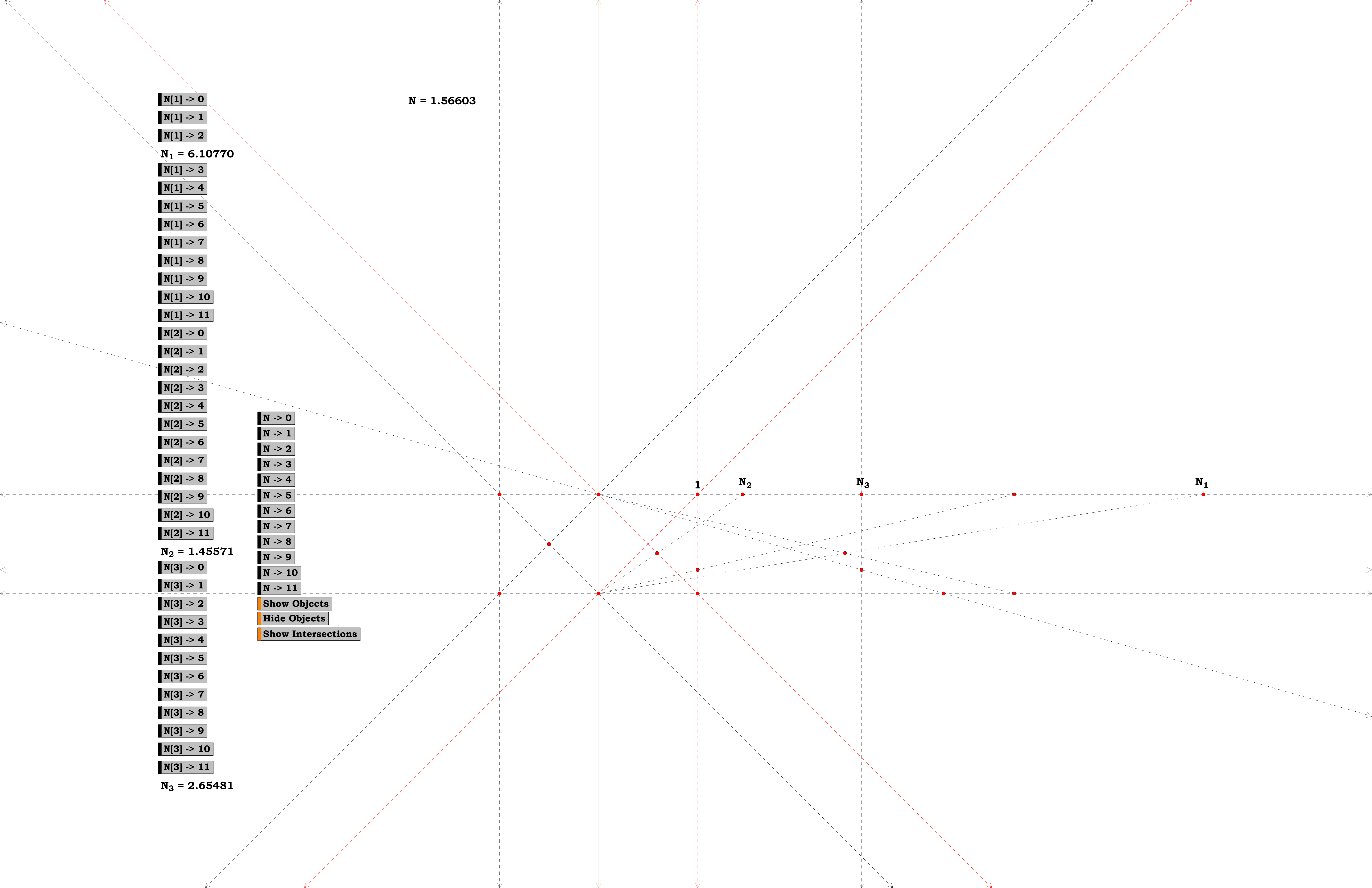
$$\frac{N_0}{B} = 6.40000$$

$$\frac{N_0}{C} = 4.60000$$

$$\frac{N_0}{D} = 2.80000$$

$$\frac{N_0}{E} = 1.00000$$

$$\frac{N_0}{F} = -0.80000$$



N = 1.56603

N_1 = 6.10770

N_2 = 1.45571

N_3 = 2.65481

Fractional Geometric Series.
Plate 1.

These are a sampling of basic plates. One can, of course, plug in any number of the glyph functions they choose.

Show Lines

0

1

0

1

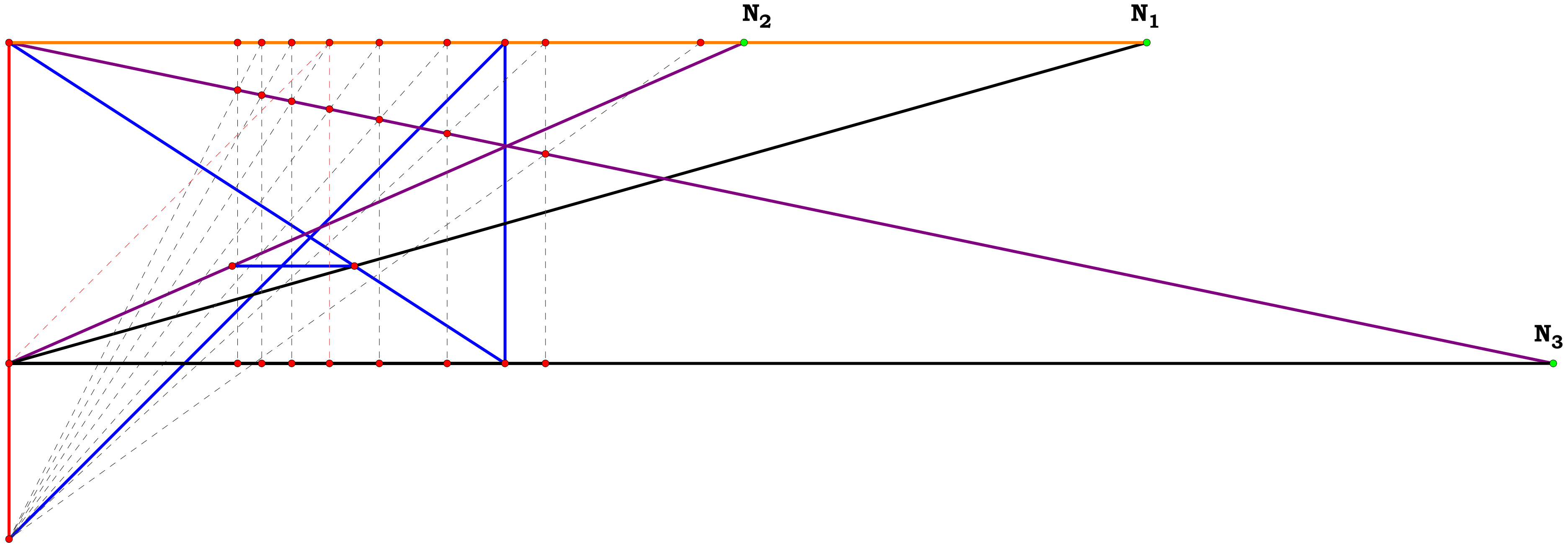
0

1

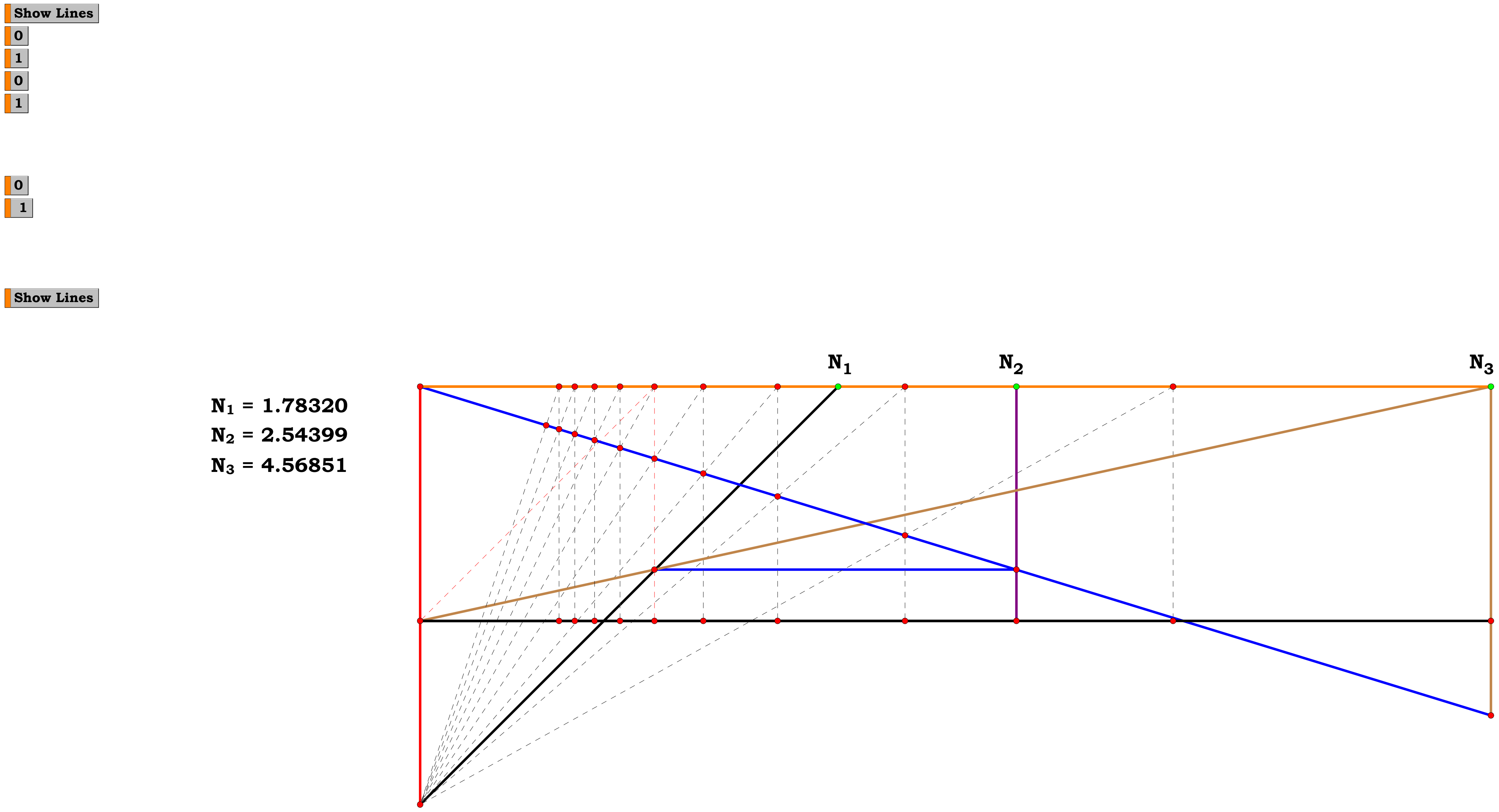
$N_1 = 3.54958$

$N_2 = 2.29344$

$N_3 = 4.81758$



Fractional Geometric Series.
Plate 2.



N_1 = 1.78320
N_2 = 2.54399
N_3 = 4.56851

Fractional Geometric Series.
Plate 3.

Show Lines

0

1

0

1

0

1

1

0

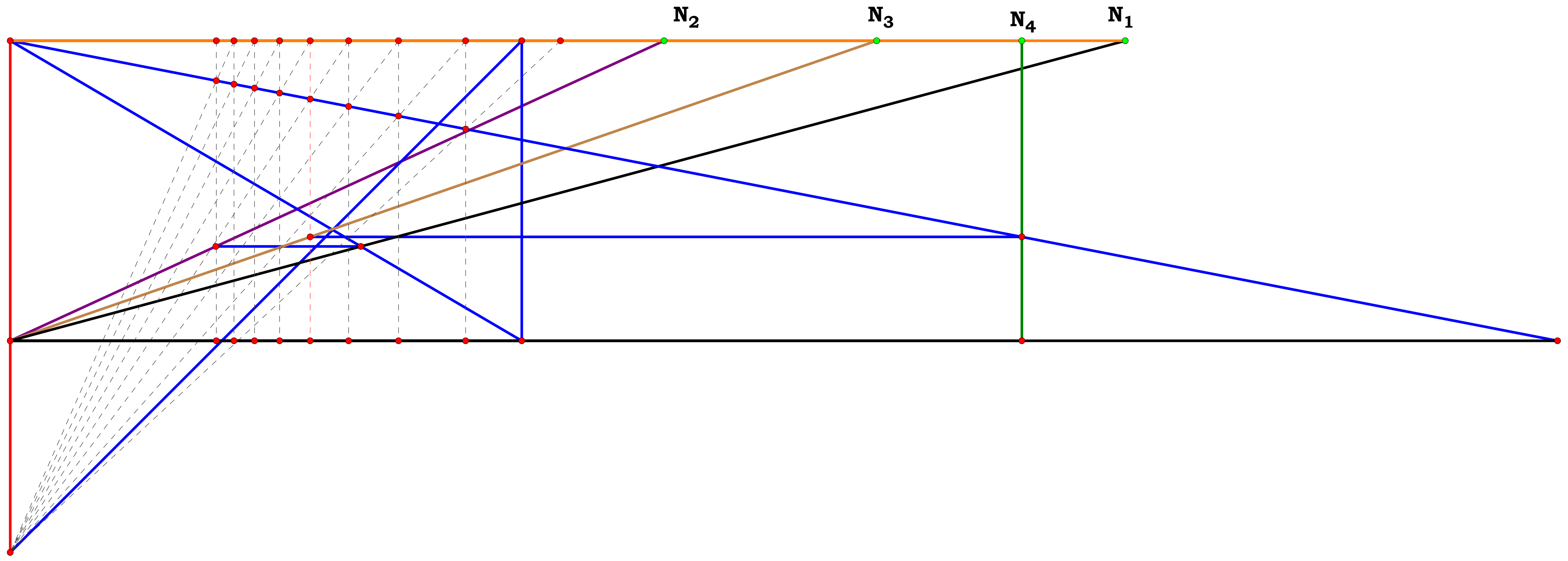
Show Lines

N_1 = 3.71669

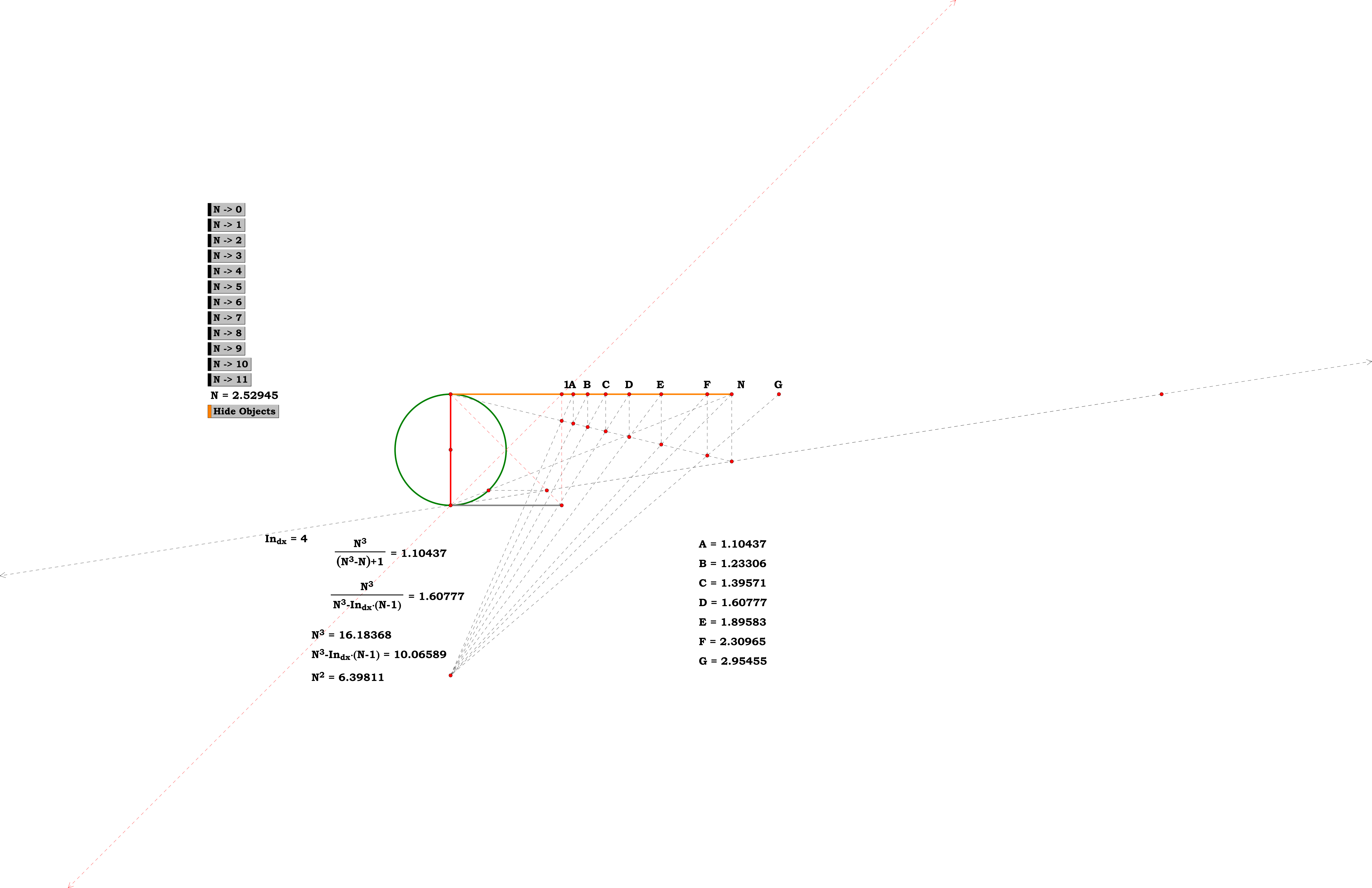
N_2 = 2.17969

N_3 = 2.88768

N_4 = 3.37164



Exponential Fractional Series:



N = 2.52945

$\mathrm{In}_{dx} = 4$

$$\frac{N^3}{(N^3-N)+1} = 1.10437$$

$$\frac{N^3}{N^3-\mathrm{In}_{dx}\cdot(N-1)} = 1.60777$$

$N^3 = 16.18368$

$N^3-\mathrm{In}_{dx}\cdot(N-1) = 10.06589$

$N^2 = 6.39811$

A = 1.10437
B = 1.23306
C = 1.39571
D = 1.60777
E = 1.89583
F = 2.30965
G = 2.95455

Free proportionals from start to finish.

Circle Points Circle Points Circle Points

Show Lines Hide Objects Show Lines Hide Objects Show Lines

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15

$In_{dx} = 0$

$$\frac{26.25000}{26.25000} = 1.00000$$

$B_3 = 6.17647$

$$\frac{N_1}{B_3 - N_1} + 1 = 5.25000$$

$$\frac{7}{3.75} = 1.86667$$

A = 1.03960
B = 1.08247
C = 1.12903
D = 1.17978
E = 1.23529
F = 1.29630
G = 1.36364
H = 1.43836
I = 1.52174

J = 1.61538
K = 1.72131
L = 1.84211
M = 1.98113
N = 2.14286
O = 2.33333
P = 2.56098
Q = 2.83784
R = 3.18182

S = 3.62069
T = 4.20000
U = 5.00000

$N_1 = 5.00000$

$N_2 = 0.00000$

$n_a = 7.00000$

$n_b = 5.00000$

$r_{da} = 1.40000$

$$\frac{n_a}{n_b} = 1.40000$$

$$N_1 \cdot \frac{n_a}{n_b} = 7.00000$$

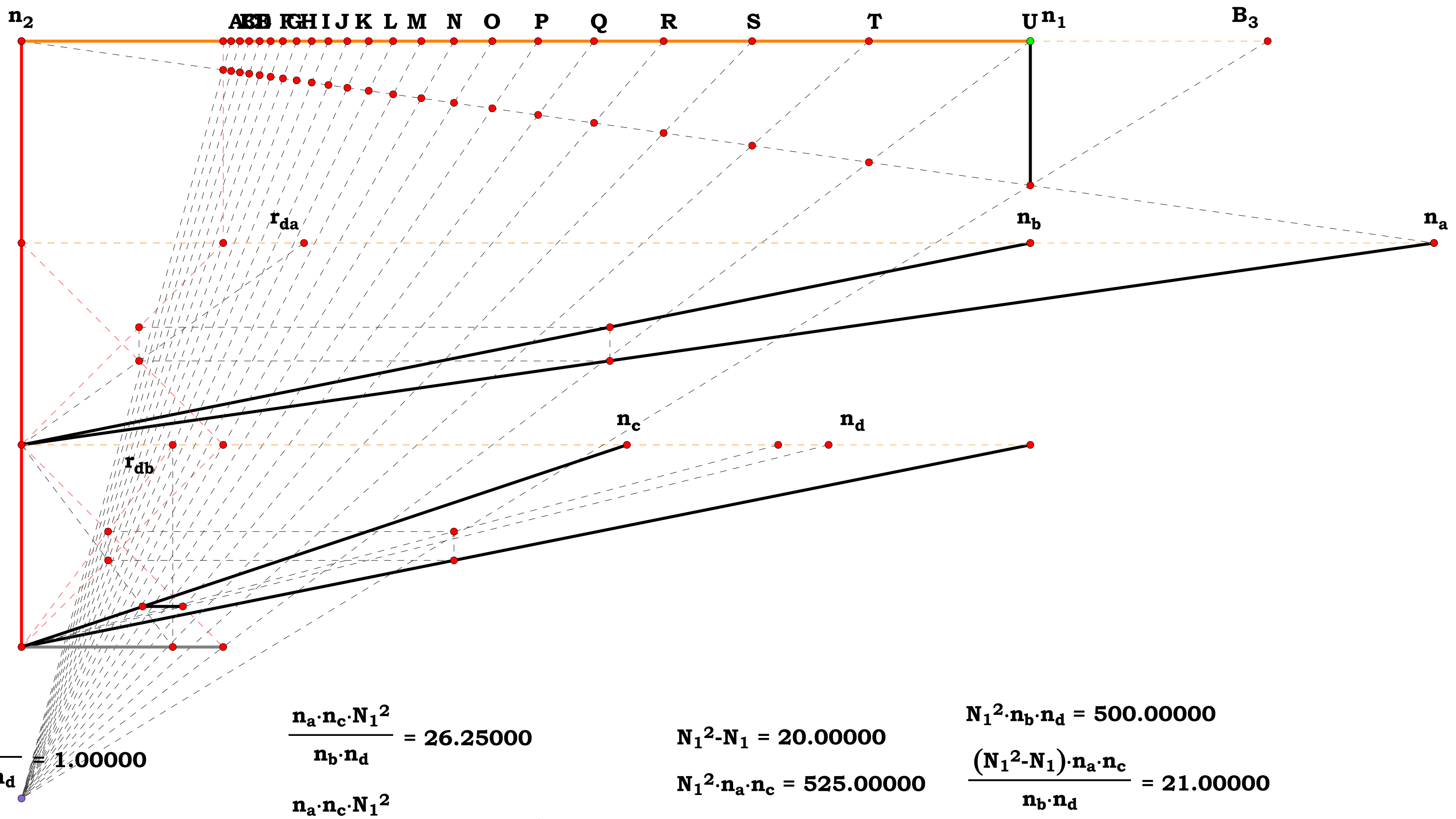
$n_c = 3.00000$

$n_d = 4.00000$

$r_{db} = 0.75000$

$$\frac{n_c}{n_d} = 0.75000$$

$$\frac{n_c}{n_d} \cdot N_1 = 3.75000$$



$$\frac{N_1^2 \cdot n_a \cdot n_c}{N_1^2 \cdot n_a \cdot n_c - In_{dx} \cdot n_b \cdot n_d} = 1.00000$$

$$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} = 26.25000$$

$$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} - In_{dx} = 26.25000$$

$N_1^2 - N_1 = 20.00000$

$N_1^2 \cdot n_a \cdot n_c = 525.00000$

$N_1^2 \cdot n_b \cdot n_d = 500.00000$

$$\frac{(N_1^2 - N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d} = 21.00000$$

Recursing from a series itself.

Circle

Show Lines

0

1

2

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11

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13

14

15

$N_1 = 4.19501$

$\frac{N_1^2}{N_1^2 - I_{ndx} \cdot (N_1 - 1)} = 3.65252$

$I_{ndx} = 4$

$N_1 \cdot (N_1 - 1) + 1 = 14.40311$

$\frac{N_1^3 - N_1 \cdot (N_1 - 1)}{N_1^3 - (N_1 - 1) \cdot (N_1 + I_{ndx})} = 1.26826$

L = 1.05583

M = 1.11827

N = 1.18855

O = 1.26826

P = 1.35942

Q = 1.46472

R = 1.58769

S = 1.73320

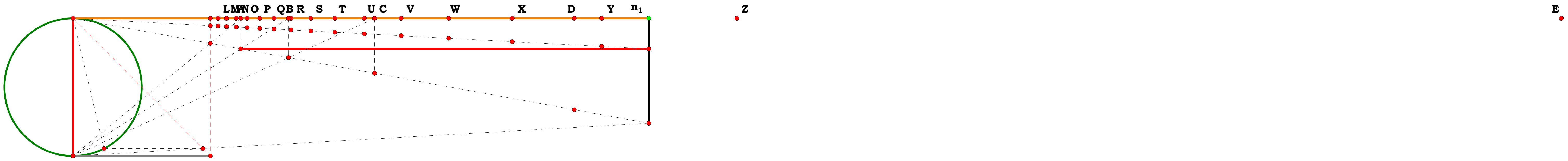
T = 1.90807

U = 2.12219

V = 2.39045

W = 2.73633

X = 3.19925



Hide Objects

Hide Objects

Hide Objects

Hide Objects

Hide Objects

$N_1 = 4.19501$

Points

A = 1.22183

B = 1.57013

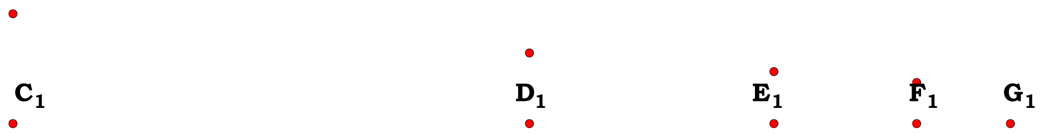
C = 2.19617

D = 3.65252

$x_E = 10.84253$

$x_Y = 3.85068$

$x_Z = 4.83523$



Circle

Show Lines

0

1

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11

12

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14

15

$N_1 = 6.00000$

Points

$I_{ndx} = 3$

$$\frac{N_1^2}{N_1^2 - I_{ndx} \cdot (N_1 - 1)} = 1.71429$$

$$\frac{2 \cdot N_1^2 - N_1}{(2 \cdot N_1^2 - I_{ndx} \cdot N_1 - N_1) + I_{ndx}} = 1.29412$$

Hide Objects

Hide Objects

Hide Objects

Hide Objects

$O = 1.08197$

$P = 1.17857$

$Q = 1.29412$

$R = 1.43478$

$S = 1.60976$

$T = 1.83333$

$U = 2.12903$

$V = 2.53846$

$W = 3.14286$

$X = 4.12500$

$Y = 6.00000$

$Z = 11.00000$

$x_{A_1} = 66.00000$

$x_{B_1} = -16.50000$

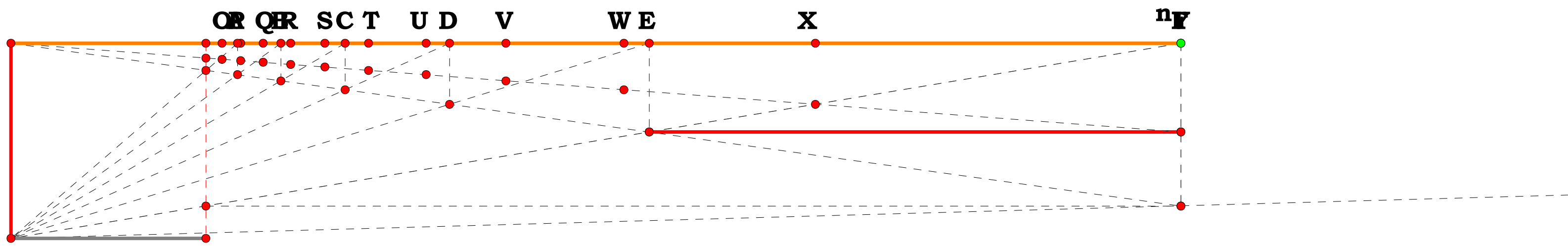
$x_{C_1} = -7.33333$

$x_{D_1} = -4.71429$

$x_{E_1} = -3.47368$

$x_{F_1} = -2.75000$

$x_{G_1} = -2.27586$



$A = 1.16129$

$B = 1.38462$

$C = 1.71429$

$D = 2.25000$

$E = 3.27273$

$F = 6.00000$

$G = 36.00000$

Circle

Show Lines

0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

Circle

Show Lines

0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

$I_{ndx} = 3$

$N_1 \cdot n_3 = 20.00000$

$N_1^2 \cdot n_3 = 100.00000$

$N_1^2 \cdot n_3 - I_{ndx} \cdot (N_1 - 1) = 88.00000$

$$\frac{(N_1^2 \cdot n_3)}{(N_1^2 \cdot n_3 - I_{ndx} \cdot (N_1 - 1))} = 1.13636$$

A = 1.04167
B = 1.08696
C = 1.13636
D = 1.19048
E = 1.25000
F = 1.31579
G = 1.38889
H = 1.47059
I = 1.56250
J = 1.66667
K = 1.78571

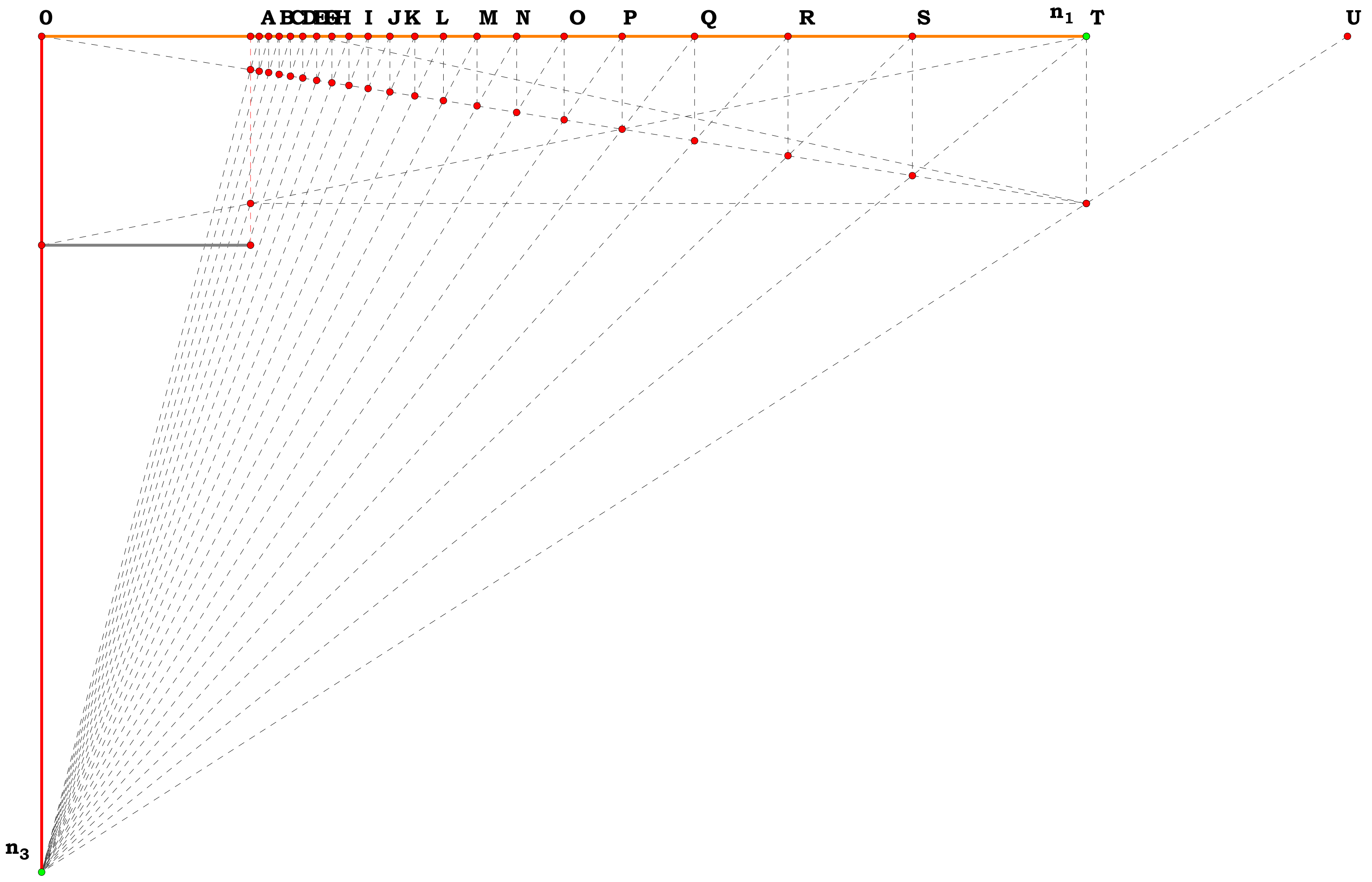
L = 1.92308
M = 2.08333
N = 2.27273
O = 2.50000
P = 2.77778
Q = 3.12500
R = 3.57143
S = 4.16667
T = 5.00000
U = 6.25000

$N_1 = 5.00000$

$n_3 = 4.00000$

Points

Points



Index is Base 0

Indexs: $I_{ndx} = 8$ $C_{indx} = 1.00000$

Number of div. by difference at an index.

$$\frac{(I_{ndx}\cdot N_2-N_1\cdot N_3)\cdot((I_{ndx}\cdot N_2+N_2)-N_1\cdot N_3)}{N_1\cdot N_2} = 0.00000$$

Total number of fractions.

$$\frac{N_1\cdot N_3}{N_2} = 9.00000 \qquad \frac{N_1\cdot N_3}{N_2} = 9.00000$$

Fraction at Index:

Num: $N_1\cdot N_3-I_{ndx}\cdot N_2 = 2.00000$

Den: $N_1 = 3.00000$

$$\frac{(N_1\cdot N_3-I_{ndx}\cdot N_2)}{N_1} = 0.66667$$

Fraction at Compliment:

$$\frac{N_1\cdot N_3-C_{indx}\cdot N_2}{N_1} = 5.33333$$

$$\frac{(N_1\cdot N_3-I_{ndx}\cdot N_2)}{N_1}+\frac{N_1\cdot N_3-C_{indx}\cdot N_2}{N_1} = 6.00000$$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

$N_1 = 3.00000$
$N_2 = 2.00000$
$N_3 = 6.00000$

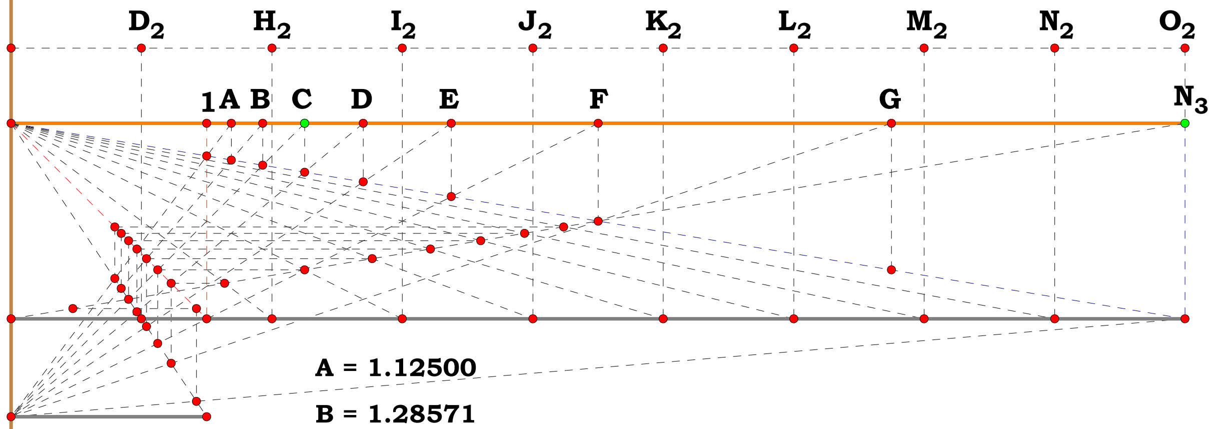
Present 2 Actions

$$\frac{N_3}{N_3+1} = 0.85714$$

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

$\frac{N_3}{1} = 6.00000$
$\frac{N_3}{A} = 5.33333$
$\frac{N_3}{B} = 4.66667$
$\frac{N_3}{C} = 4.00000$
$\frac{N_3}{D} = 3.33333$
$\frac{N_3}{E} = 2.66667$
$\frac{N_3}{F} = 2.00000$
$\frac{N_3}{G} = 1.33333$

$O_2 = 6.00000$ $I_2 = 2.00000$
$N_2 = 5.33333$ $H_2 = 1.33333$
$M_2 = 4.66667$
$L_2 = 4.00000$
$K_2 = 3.33333$
$J_2 = 2.66667$ $D_2 = 0.66667$



A = 1.12500
B = 1.28571
C = 1.50000
D = 1.80000
E = 2.25000
F = 3.00000
G = 4.50000

Indexs: Index = 2 $C_{indx} = 7.00$

Number of div. by difference at an index.

$$\frac{(\text{Index}\cdot(1-N_3)+N_1\cdot N_2\cdot N_3)\cdot((N_3+\text{Index}\cdot(1-N_3)+N_1\cdot N_2\cdot N_3)-1)}{N_1\cdot N_2\cdot(N_3-1)} = 40.85000$$

len of frac. $\frac{N_1\cdot N_2\cdot N_3}{N_1\cdot N_2\cdot N_3-\text{Index}\cdot(N_3-1)} = 1.26316$

Total number of fractions.

$N_1\cdot N_2+1 = 9.00000$

Fraction at Index:

Num: $N_1\cdot N_2\cdot N_3-\text{Index}\cdot(N_3-1) = 38.00000$

Den: $N_1\cdot N_2 = 8.00000$

$$\frac{(N_1\cdot N_2\cdot N_3-\text{Index}\cdot(N_3-1))}{(N_1\cdot N_2)} = 4.75000$$

Fraction at Compliment:

$$\frac{N_1\cdot N_2\cdot N_3-C_{indx}\cdot(N_3-1)}{N_1\cdot N_2} = 1.62500$$

$$\frac{(N_3-C_{indx}\cdot N_3-\text{Index}\cdot N_3)+2\cdot N_1\cdot N_2\cdot N_3}{N_1\cdot N_2} = 6.00000$$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

$N_1 = 4.00000$
$N_2 = 2.00000$
$N_3 = 6.00000$

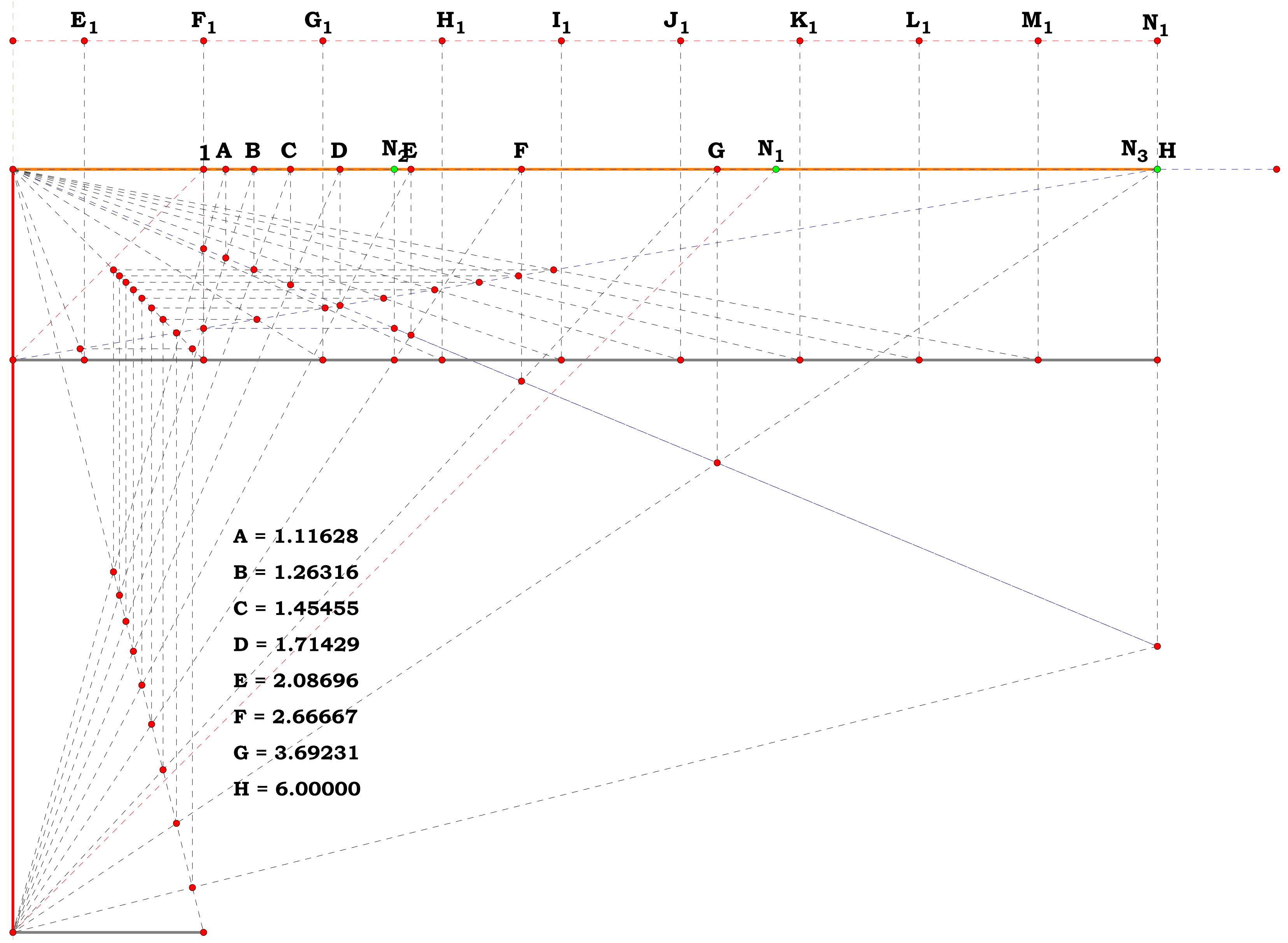
N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

$\frac{N_3}{1} = 6.00000$
$\frac{N_3}{A} = 5.37500$
$\frac{N_3}{B} = 4.75000$
$\frac{N_3}{C} = 4.12500$
$\frac{N_3}{D} = 3.50000$

$\frac{N_3}{E} = 2.87500$
$\frac{N_3}{F} = 2.25000$
$\frac{N_3}{G} = 1.62500$
$\frac{N_3}{H} = 1.00000$

$N_1 = 6.00000$
$M_1 = 5.37500$
$L_1 = 4.75000$
$K_1 = 4.12500$
$J_1 = 3.50000$

$I_1 = 2.87500$
$H_1 = 2.25000$
$G_1 = 1.62500$
$F_1 = 1.00000$
$E_1 = 0.37500$



A = 1.11628
B = 1.26316
C = 1.45455
D = 1.71429
E = 2.08696
F = 2.66667
G = 3.69231
H = 6.00000

$i_{dx} = 4$

$$\frac{N_0 \cdot N_1 \cdot N_3}{i_{dx} \cdot (N_2 - N_2 \cdot N_0) + N_0 \cdot N_1 \cdot N_3} = 8.00875$$

$$\frac{N_1 \cdot N_3 - i_{dx} \cdot N_2 \cdot (1 - N_0)}{N_1 \cdot N_3} = 3.54661$$

Total number of fractions.

$$\frac{N_1 \cdot N_2 \cdot N_3}{N_2 \cdot N_3} + 1 = 4.00000$$

Fraction at Index:

Num: $i_{dx} \cdot (N_2 - N_0 \cdot N_2) + N_0 \cdot N_1 \cdot N_3 = 5.45021$

Den: $N_1 \cdot N_3 = 15.00000$

$$\frac{(i_{dx} \cdot (N_2 - N_0 \cdot N_2) + N_0 \cdot N_1 \cdot N_3)}{(N_1 \cdot N_3)} = 0.36335$$

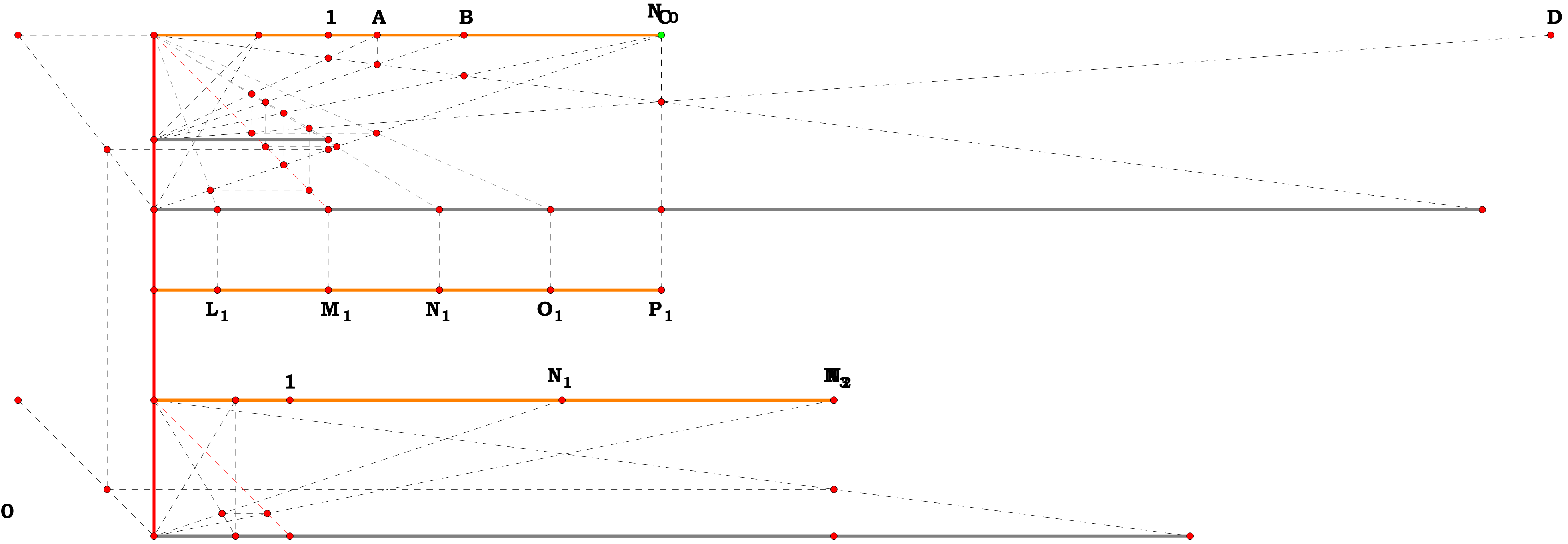
$N_0 = 2.90996$

$N_1 = 3.00000$

$N_2 = 5.00000$

$N_3 = 5.00000$

$N_1 \cdot N_3 = 15.00000$



N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

N [0] -> 0
N [0] -> 1
N [0] -> 2
N [0] -> 3
N [0] -> 4
N [0] -> 5
N [0] -> 6
N [0] -> 7
N [0] -> 8
N [0] -> 9
N [0]-> 10
N [0] -> 11

A = 1.28006
B = 1.77799
C = 2.90996
D = 8.00875

$L_1 = 0.36335$

$P_1 = 2.90996$

$O_1 = 2.27331$

$N_1 = 1.63665$

$M_1 = 1.00000$

$$\frac{N_0}{O_1 - N_1} = 4.57072$$

$$\frac{N_0}{A} = 2.27331$$

$$\frac{N_0}{B} = 1.63665$$

$$\frac{N_0}{C} = 1.00000$$

$$\frac{N_0}{D} = 0.36335$$

N -> 0

N -> 1

N -> 2

N -> 3

N -> 4

N -> 5

N -> 6

N -> 7

N -> 8

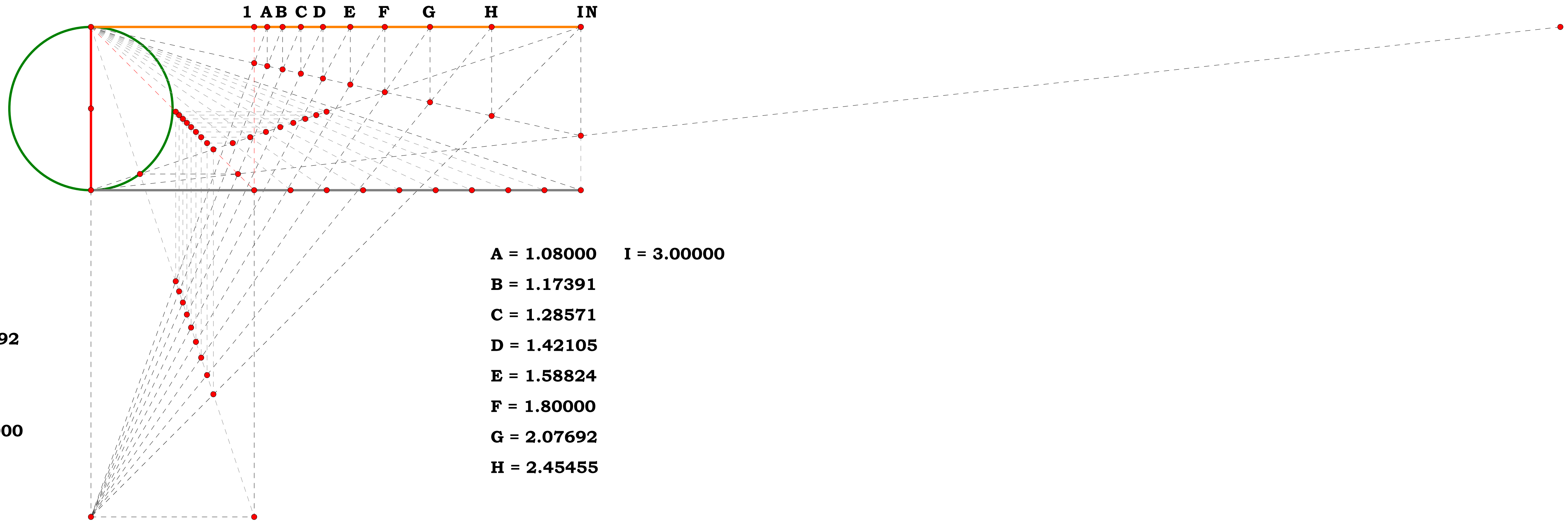
N -> 9

N -> 10

N -> 11

N = 3.00000

Show Objects



$In_{dx} = 7$

$\frac{N^3}{(N^3-N)+1} = 1.08000$

$\frac{N^3}{N^3-In_{dx}\cdot(N-1)} = 2.07692$

$N^3 = 27.00000$

$N^3-In_{dx}\cdot(N-1) = 13.00000$

$N^2 = 9.00000$

A = 1.08000

I = 3.00000

B = 1.17391

C = 1.28571

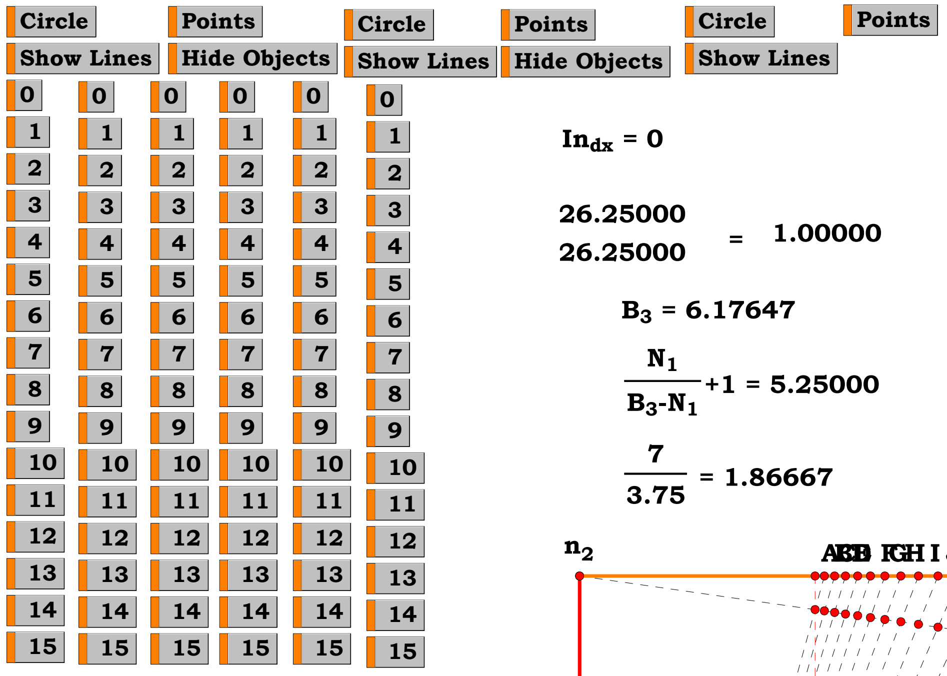
D = 1.42105

E = 1.58824

F = 1.80000

G = 2.07692

H = 2.45455



$In_{dx} = 0$

$\frac{26.25000}{26.25000} = 1.00000$

$B_3 = 6.17647$

$\frac{N_1}{B_3 - N_1} + 1 = 5.25000$

$\frac{7}{3.75} = 1.86667$

A = 1.03960
B = 1.08247
C = 1.12903
D = 1.17978
E = 1.23529
F = 1.29630
G = 1.36364
H = 1.43836
I = 1.52174
J = 1.61538
K = 1.72131
L = 1.84211
M = 1.98113
N = 2.14286
O = 2.33333
P = 2.56098
Q = 2.83784
R = 3.18182
S = 3.62069
T = 4.20000
U = 5.00000

$N_1 = 5.00000$

$N_2 = 0.00000$

$n_a = 7.00000$

$n_b = 5.00000$

$r_{da} = 1.40000$

$\frac{n_a}{n_b} = 1.40000$

$N_1 \cdot \frac{n_a}{n_b} = 7.00000$

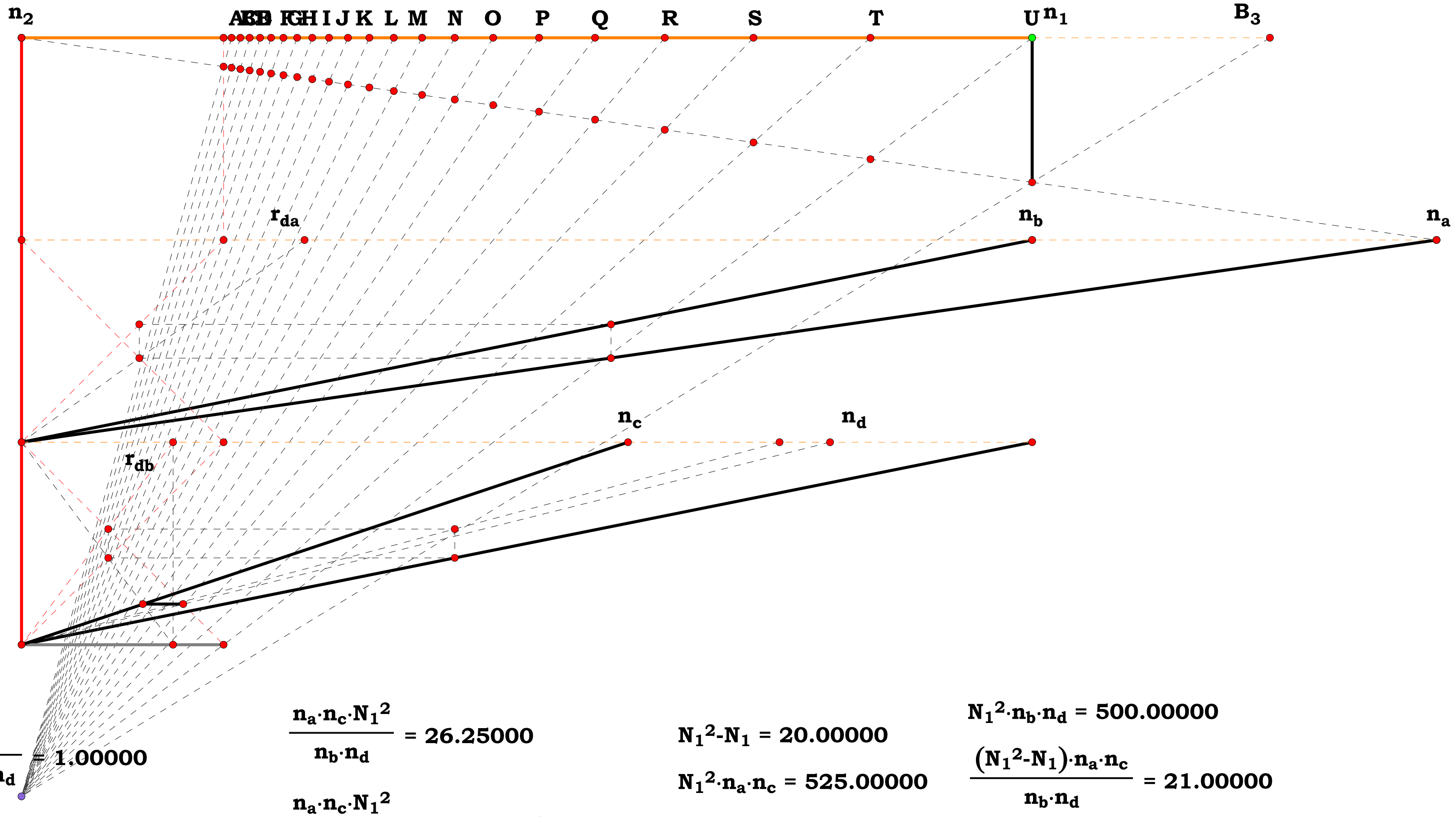
$n_c = 3.00000$

$n_d = 4.00000$

$r_{db} = 0.75000$

$\frac{n_c}{n_d} = 0.75000$

$\frac{n_c}{n_d} \cdot N_1 = 3.75000$



$\frac{N_1^2 \cdot n_a \cdot n_c}{N_1^2 \cdot n_a \cdot n_c - In_{dx} \cdot n_b \cdot n_d} = 1.00000$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} = 26.25000$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} - In_{dx} = 26.25000$

$N_1^2 - N_1 = 20.00000$

$N_1^2 \cdot n_a \cdot n_c = 525.00000$

$N_1^2 \cdot n_b \cdot n_d = 500.00000$

$\frac{(N_1^2 - N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d} = 21.00000$

Circle Points Circle Points Circle Points

Show Lines Hide Objects Show Lines Hide Objects Show Lines

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15

$N_1 = 5.00000$

$N_2 = 0.00000$

$n_a = 7.00000$

$n_b = 5.00000$

$r_{da} = 1.40000$

$\frac{n_a}{n_b} = 1.40000$

$N_1 \cdot \frac{n_a}{n_b} = 7.00000$

$n_c = 3.00000$

$n_d = 4.00000$

$r_{db} = 0.75000$

$\frac{n_c}{n_d} = 0.75000$

$\frac{n_c}{n_d} \cdot N_1 = 3.75000$

$In_{dx} = 0$

$\frac{26.25000}{26.25000} = 1.00000$

$B_3 = 6.17647$

$\frac{N_1}{B_3 - N_1} + 1 = 5.25000$

$\frac{7}{3.75} = 1.86667$

A = 1.03960
B = 1.08247
C = 1.12903
D = 1.17978
E = 1.23529
F = 1.29630
G = 1.36364
H = 1.43836
I = 1.52174
J = 1.61538
K = 1.72131
L = 1.84211
M = 1.98113
N = 2.14286
O = 2.33333
P = 2.56098
Q = 2.83784
R = 3.18182
S = 3.62069
T = 4.20000
U = 5.00000

26.25+5.25 = 31.50000

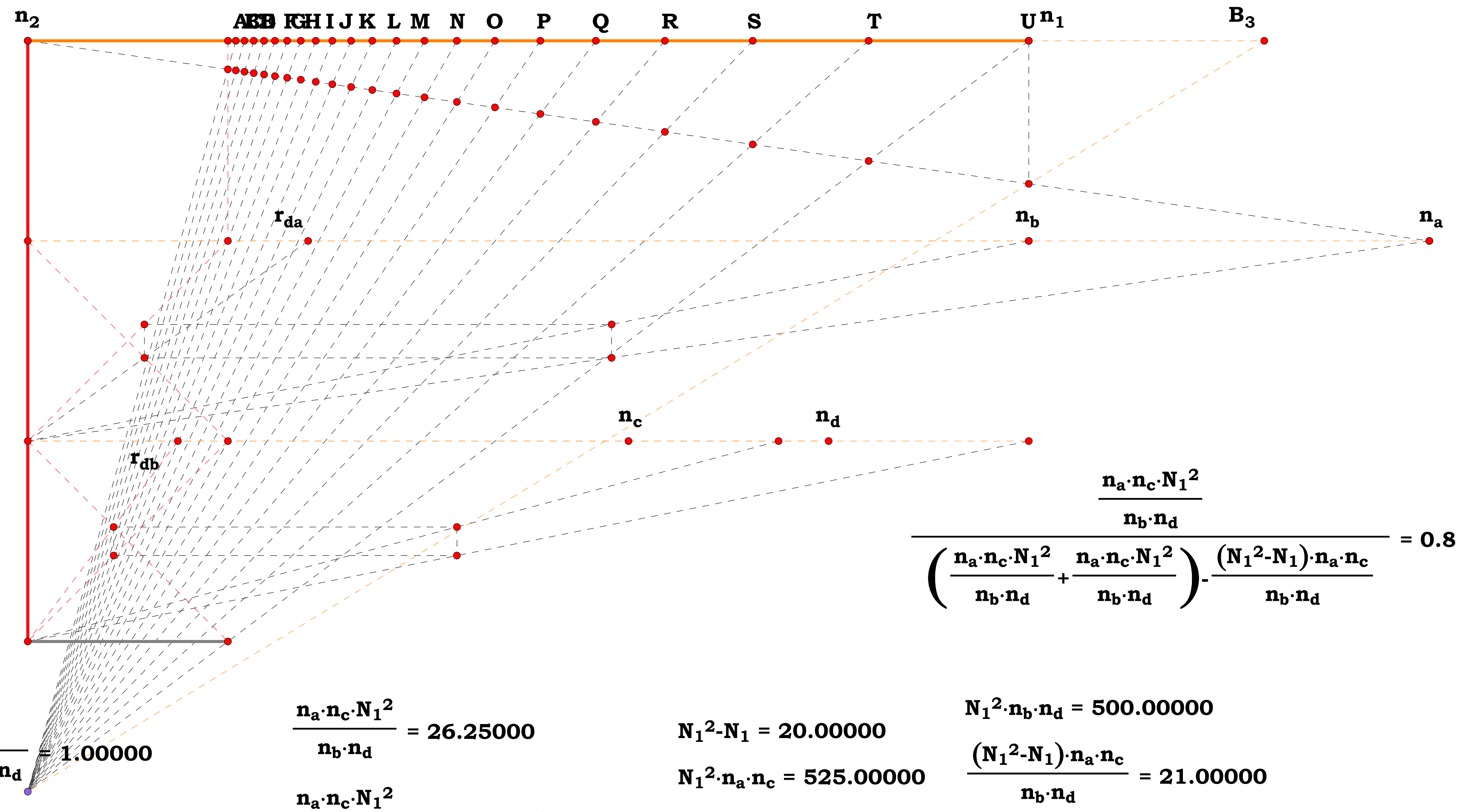
25.25+6.25 = 31.50000

24.25+7.25 = 31.50000

$\frac{26.25}{(26.25+5.25)} = 0.83333$

$\frac{26.25}{(25.25+6.25)} = 0.83333$

$\frac{26.25}{(24.25+7.25)} = 0.83333$



$$\frac{\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d}}{\left(\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} + \frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d}\right) - \frac{(N_1^2 - N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d}} = 0.83333$$

$\frac{N_1}{N_1+1} = 0.83333$

$\frac{m_3}{m_3-1} = 1.03960$

$\frac{N_1^2 \cdot n_a \cdot n_c}{N_1^2 \cdot n_a \cdot n_c - In_{dx} \cdot n_b \cdot n_d} = 1.00000$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} = 26.25000$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} - In_{dx} = 26.25000$

$N_1^2 - N_1 = 20.00000$

$N_1^2 \cdot n_a \cdot n_c = 525.00000$

$N_1^2 \cdot n_b \cdot n_d = 500.00000$

$\frac{(N_1^2 - N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d} = 21.00000$

Circle

Show Lines

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

$N_1 = 4.00000$

$$\frac{N_1^2}{N_1^2 - I_{ndx} \cdot (N_1 - 1)} = 4.00000$$

$I_{ndx} = 4$

$N_1 \cdot (N_1 - 1) + 1 = 13.00000$

$$\frac{N_1^3 - N_1 \cdot (N_1 - 1)}{N_1^3 - (N_1 - 1) \cdot (N_1 + I_{ndx})} = 1.30000$$

L = 1.06122

M = 1.13043

N = 1.20930

O = 1.30000

P = 1.40541

Q = 1.52941

R = 1.67742

S = 1.85714

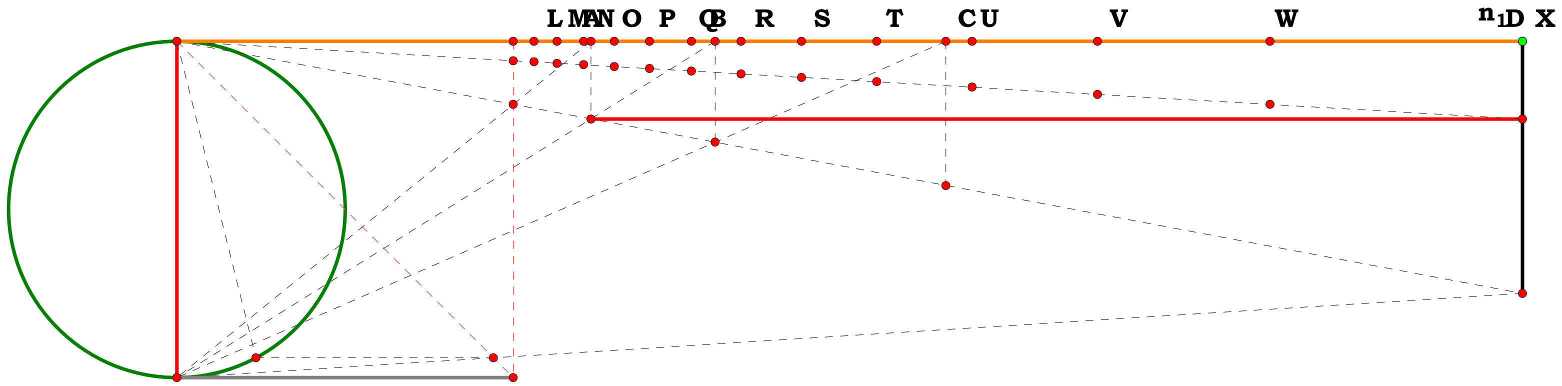
T = 2.08000

U = 2.36364

V = 2.73684

W = 3.25000

X = 4.00000



Hide Objects

Hide Objects

Hide Objects

Hide Objects

Hide Objects

$N_1 = 4.00000$

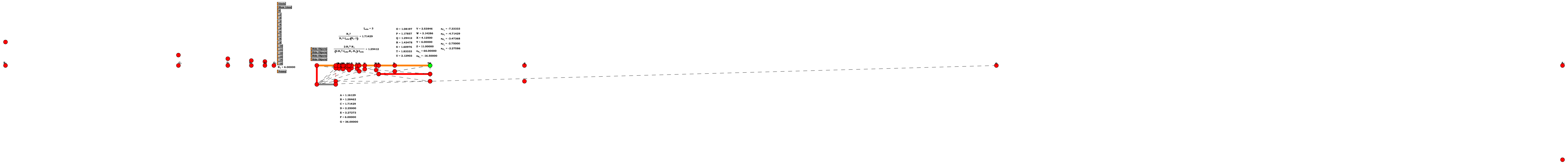
Points

A = 1.23077

B = 1.60000

C = 2.28571

D = 4.00000



$N_1 = 6.00000$

$I_{ndx} = 3$

$$\frac{N_1^2}{N_1^2 - I_{ndx} \cdot (N_1 - 1)} = 1.71429$$

$$\frac{2 \cdot N_1^2 - N_1}{(2 \cdot N_1^2 - I_{ndx} \cdot N_1 - N_1) + I_{ndx}} = 1.29412$$

O = 1.08197
P = 1.17857
Q = 1.29412
R = 1.43478
S = 1.60976
T = 1.83333
U = 2.12903

V = 2.53846
W = 3.14286
X = 4.12500
Y = 6.00000
Z = 11.00000
$x_{A_1} = 66.00000$
$x_{B_1} = -16.50000$

$x_{C_1} = -7.33333$
$x_{D_1} = -4.71429$
$x_{E_1} = -3.47368$
$x_{F_1} = -2.75000$
$x_{G_1} = -2.27586$

A = 1.16129
B = 1.38462
C = 1.71429
D = 2.25000
E = 3.27273
F = 6.00000
G = 36.00000

Circle
Show Lines
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

$N_1 = 5.00000$

Points

Circle
Show Lines
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

$n_3 = 4.00000$

Points

$I_{ndx} = 3$

$N_1 \cdot n_3 = 20.00000$

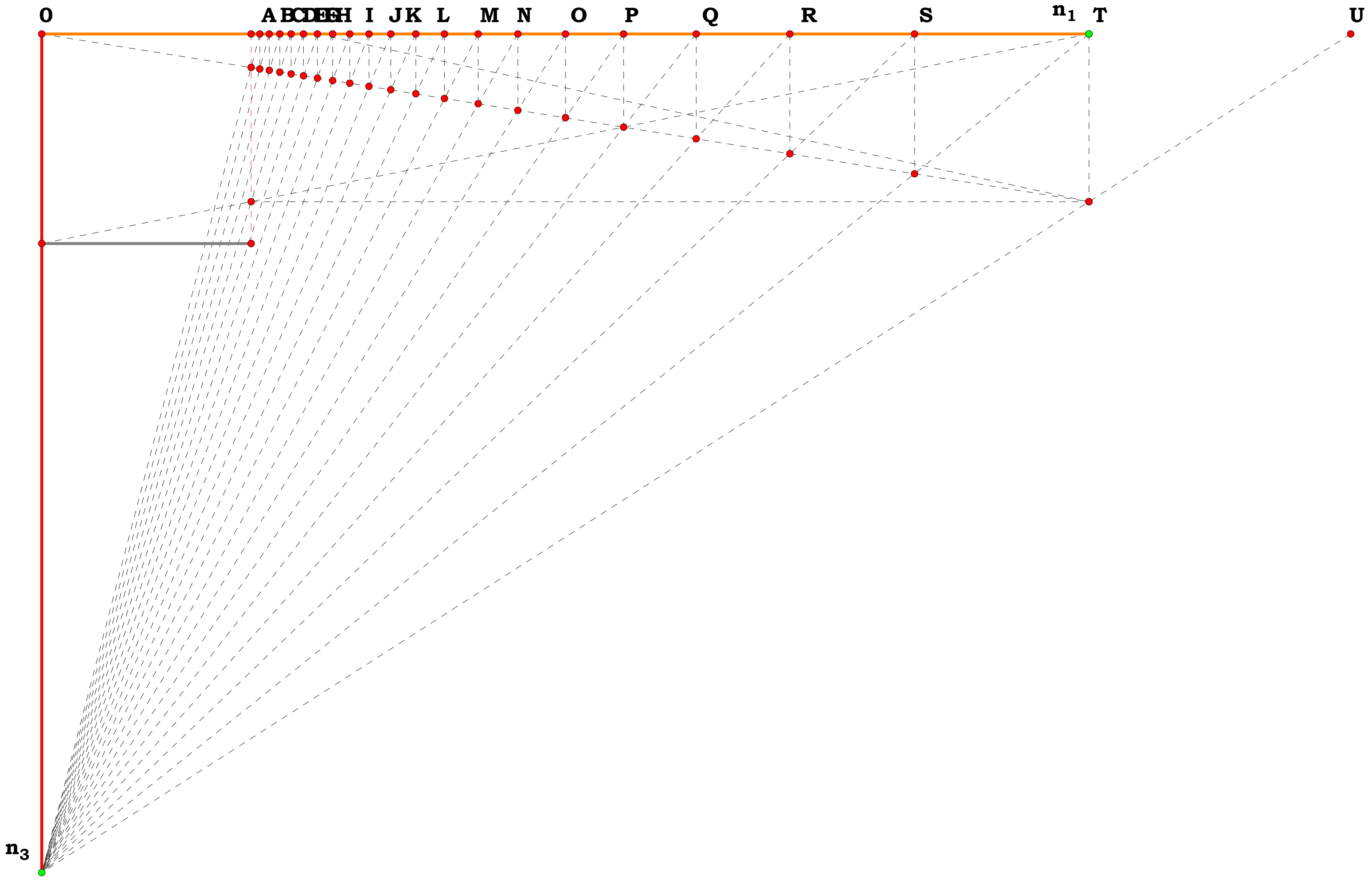
$N_1^2 \cdot n_3 = 100.00000$

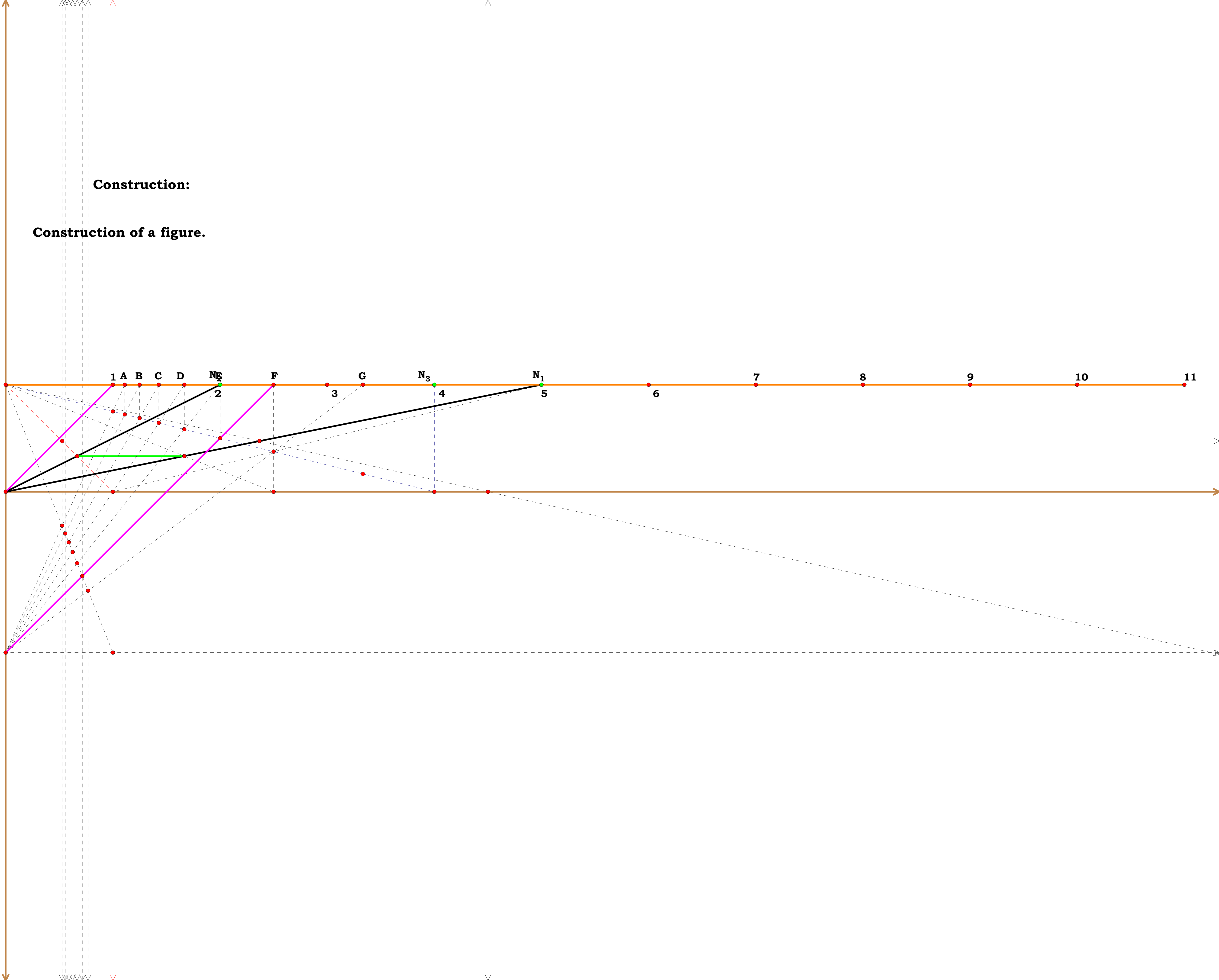
$N_1^2 \cdot n_3 - I_{ndx} \cdot (N_1 - 1) = 88.00000$

$$\frac{(N_1^2 \cdot n_3)}{(N_1^2 \cdot n_3 - I_{ndx} \cdot (N_1 - 1))} = 1.13636$$

A = 1.04167
B = 1.08696
C = 1.13636
D = 1.19048
E = 1.25000
F = 1.31579
G = 1.38889
H = 1.47059
I = 1.56250
J = 1.66667
K = 1.78571

L = 1.92308
M = 2.08333
N = 2.27273
O = 2.50000
P = 2.77778
Q = 3.12500
R = 3.57143
S = 4.16667
T = 5.00000
U = 6.25000





Construction:

Construction of a figure.

Index is Base 0

Index: $I_{ndx} = 0$

Number of div. by difference at an index.

$$\frac{(I_{ndx}\cdot N_2-N_1\cdot N_3)\cdot((I_{ndx}\cdot N_2+N_2)-N_1\cdot N_3)}{N_1\cdot N_2} = 36.00000$$

Total number of fractions.

$$\frac{N_1\cdot(N_3-1)}{N_2} = 7.50000$$

Fraction at Index:

Num: $N_1\cdot N_3-I_{ndx}\cdot N_2 = 20.00000$

Den: $N_2 = 2.00000$

$$\frac{(N_1\cdot N_3-I_{ndx}\cdot N_2)}{N_2} = 10.00000$$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

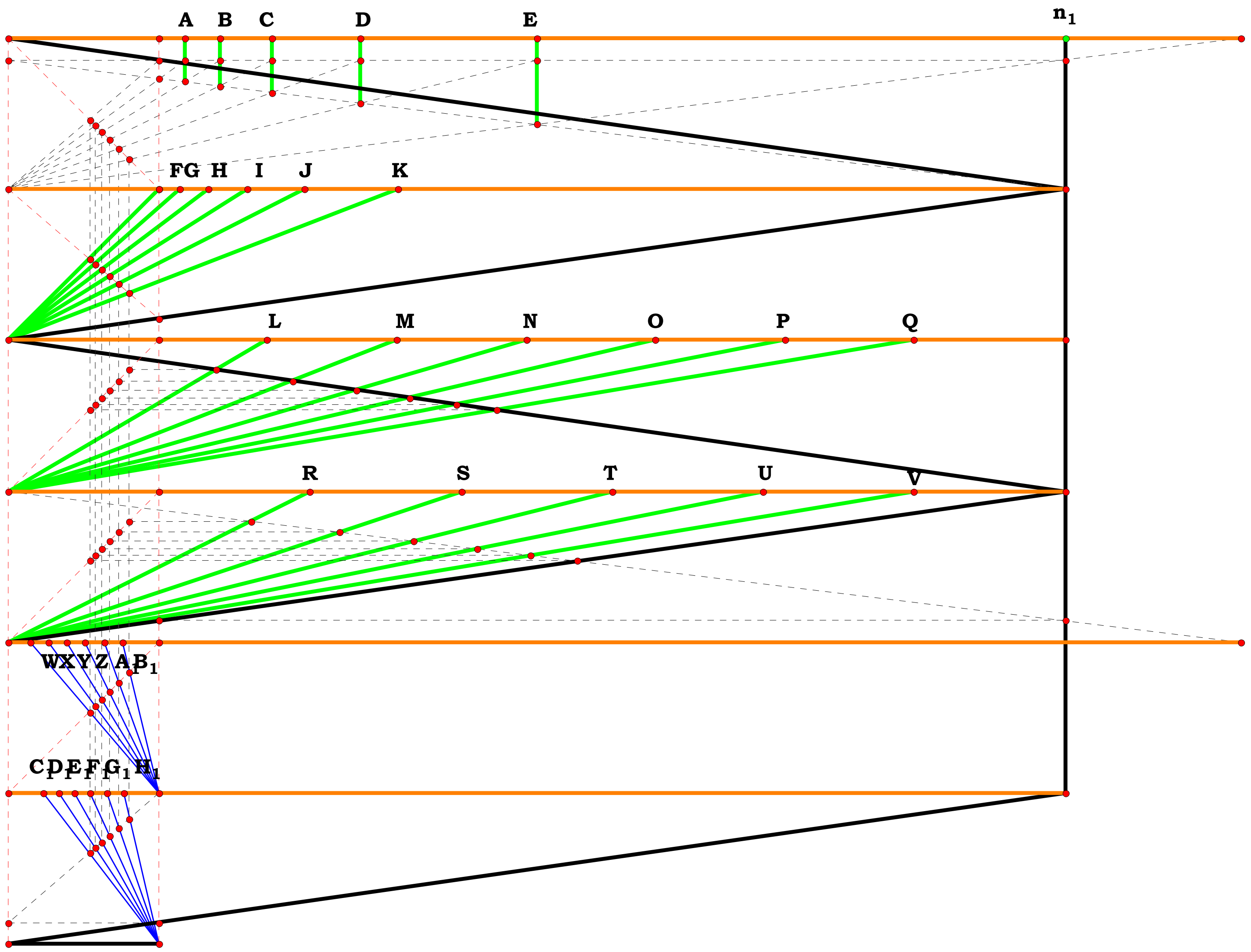
$N_1 = 5.00000$
$N_2 = 2.00000$
$N_3 = 4.00000$

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

Show Intersection

Graphic Model Fractions Book 2

A = 1.16667
B = 1.40000
C = 1.75000
D = 2.33333
E = 3.50000



Index is Base 0

Index: $I_{ndx} = 0$

Number of div.
at an index.

$$N_b - \frac{I_{ndx}}{N_a} = 5.00000$$

Number of div. by
difference at an index.

$$\frac{(I_{ndx} - N_a \cdot N_b) \cdot ((I_{ndx} - N_a \cdot N_b) + 1)}{N_a} = 45.0000$$

Total number of fractions.

$$N_a \cdot N_b - N_a = 8.00000$$

$$\frac{\text{numerator}}{\text{denominator}} = 2.00000$$

numerator = 2.00000

denominator = 1.00000

$N_a = 2.00000$

$N_b = 5.00000$

num

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

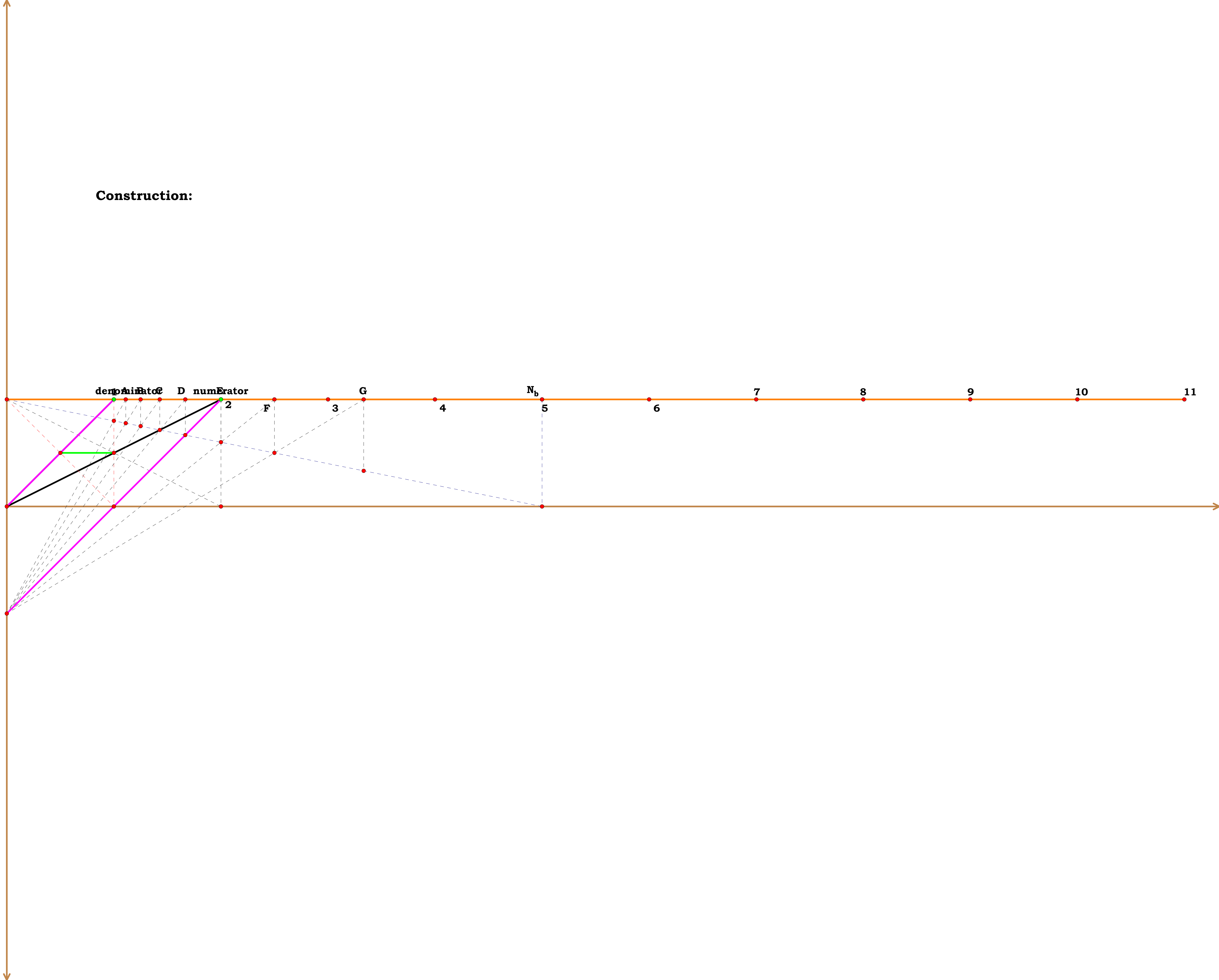
den

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

Hide Intersection

Construction:



Index is Base 0

Index: $I_{ndx} = 1$

Number of div. at an index. $N_b - \frac{I_{ndx}}{N_a} = 10.54545$

Number of div. by difference at an index.

$$\frac{(I_{ndx} - N_a \cdot N_b) \cdot ((I_{ndx} - N_a \cdot N_b) + 1)}{N_a} = 234.1091$$

Total number of fractions.

$N_a \cdot N_b - N_a = 22.00000$

Present 2 Actions

$\frac{numerator}{denominator} = 2.20000$

numerator = 11.00000

denominator = 5.00000

$N_a = 2.20000$

$N_b = 11.00000$

$\frac{N_b}{1} = 11.00000$

$\frac{N_b}{A} = 10.54545$

$\frac{N_b}{B} = 10.09091$

$\frac{N_b}{C} = 9.63636$

$\frac{N_b}{D} = 9.18182$

$\frac{N_b}{E} = 8.72727$

$\frac{N_b}{F} = 8.27273$

$\frac{N_b}{G} = 7.81818$

$\frac{N_b}{H} = 7.36364$

$\frac{N_b}{I} = 6.90909$

$\frac{N_b}{J} = 6.45455$

$\frac{N_b}{K} = 6.00000$

$\frac{N_b}{L} = 5.54545$

$\frac{N_b}{M} = 5.09091$

$\frac{N_b}{N} = 4.63636$

$\frac{N_b}{O} = 4.18182$

$\frac{N_b}{P} = 3.72727$

$\frac{N_b}{Q} = 3.27273$

$\frac{N_b}{R} = 2.81818$

$\frac{N_b}{S} = 2.36364$

$\frac{N_b}{T} = 1.90909$

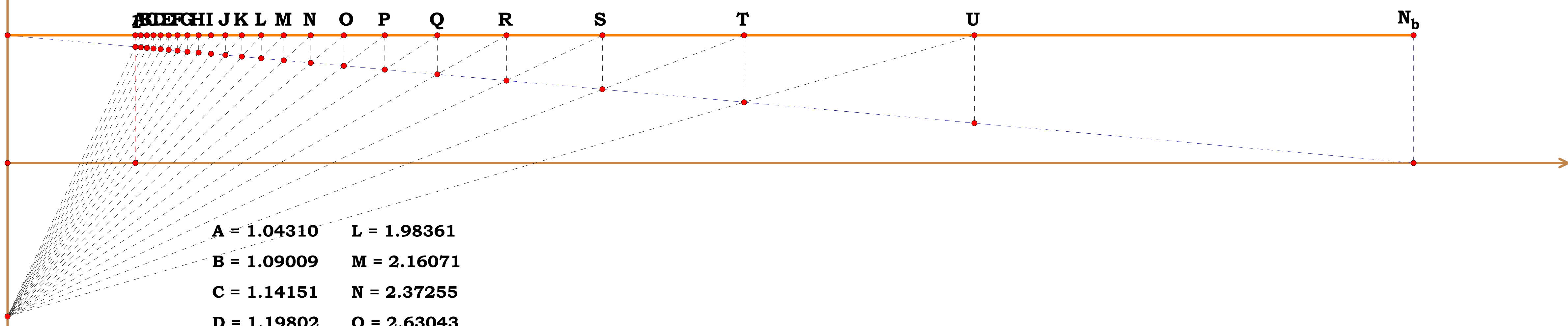
$\frac{N_b}{U} = 1.45455$

$\frac{116}{11} = 10.54545$

$\frac{111}{11} = 10.09091$

$\frac{106}{11} = 9.63636$

$\frac{101}{11} = 9.18182$



num	den	
N[1] -> 0	N[3] -> 0	N[2] -> 0
N[1] -> 1	N[3] -> 1	N[2] -> 1
N[1] -> 2	N[3] -> 2	N[2] -> 2
N[1] -> 3	N[3] -> 3	N[2] -> 3
N[1] -> 4	N[3] -> 4	N[2] -> 4
N[1] -> 5	N[3] -> 5	N[2] -> 5
N[1] -> 6	N[3] -> 6	N[2] -> 6
N[1] -> 7	N[3] -> 7	N[2] -> 7
N[1] -> 8	N[3] -> 8	N[2] -> 8
N[1] -> 9	N[3] -> 9	N[2] -> 9
N[1] -> 10	N[3] -> 10	N[2] -> 10
N[1] -> 11	N[3] -> 11	N[2] -> 11

A = 1.04310

B = 1.09009

C = 1.14151

D = 1.19802

E = 1.26042

F = 1.32967

G = 1.40698

H = 1.49383

I = 1.59211

J = 1.70423

K = 1.83333

L = 1.98361

M = 2.16071

N = 2.37255

O = 2.63043

P = 2.95122

Q = 3.36111

R = 3.90323

S = 4.65385

T = 5.76190

U = 7.56250

Show Intersection

Index is Base 0

$I_{ndx} = 0$

$N_b - \frac{I_{ndx}}{N_a} = 11.00000$

$\frac{(I_{ndx}-N_a\cdot N_b)\cdot((I_{ndx}-N_a\cdot N_b)+1)}{N_a} = 110.0000$

$N_a\cdot N_b - N_a = 10.00000$

Present 2 Actions

$\frac{N_b}{1} = 11.00000$

$\frac{N_b}{A} = 10.00000$

$\frac{N_b}{B} = 9.00000$

$\frac{N_b}{C} = 8.00000$

$\frac{N_b}{D} = 7.00000$

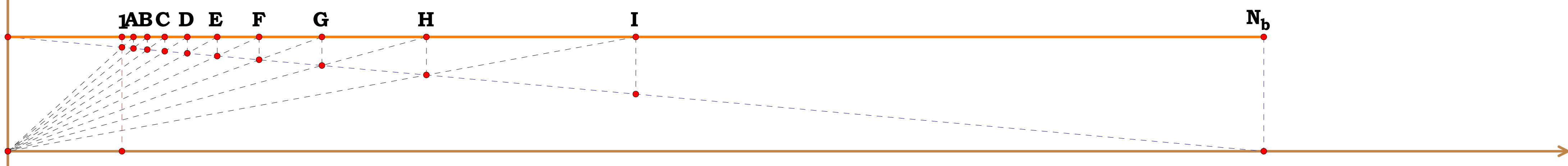
$\frac{N_b}{E} = 6.00000$

$\frac{N_b}{F} = 5.00000$

$\frac{N_b}{G} = 4.00000$

$\frac{N_b}{H} = 3.00000$

$\frac{N_b}{I} = 2.00000$



$\frac{\text{numerator}}{\text{denominator}} = 1.00000$

numerator = 1.00000

denominator = 1.00000

$N_a = 1.00000$

$N_b = 11.00000$

num	den	
N[1] -> 0	N[3] -> 0	N[2] -> 0
N[1] -> 1	N[3] -> 1	N[2] -> 1
N[1] -> 2	N[3] -> 2	N[2] -> 2
N[1] -> 3	N[3] -> 3	N[2] -> 3
N[1] -> 4	N[3] -> 4	N[2] -> 4
N[1] -> 5	N[3] -> 5	N[2] -> 5
N[1] -> 6	N[3] -> 6	N[2] -> 6
N[1] -> 7	N[3] -> 7	N[2] -> 7
N[1] -> 8	N[3] -> 8	N[2] -> 8
N[1] -> 9	N[3] -> 9	N[2] -> 9
N[1] -> 10	N[3] -> 10	N[2] -> 10
N[1] -> 11	N[3] -> 11	N[2] -> 11

A = 1.10000

B = 1.22222

C = 1.37500

D = 1.57143

E = 1.83333

F = 2.20000

G = 2.75000

H = 3.66667

I = 5.50000

Show Intersection

Index is Base 0

$I_{ndx} = 0$

$N_b - \frac{I_{ndx}}{N_a} = 7.00000$

$\frac{(I_{ndx} - N_a \cdot N_b) \cdot ((I_{ndx} - N_a \cdot N_b) + 1)}{N_a} = 42.0000$

$N_a \cdot N_b - N_a = 6.00000$

$\frac{N_b}{1} = 7.00000$

$\frac{N_b}{A} = 6.00000$

$\frac{N_b}{B} = 5.00000$

$\frac{N_b}{C} = 4.00000$

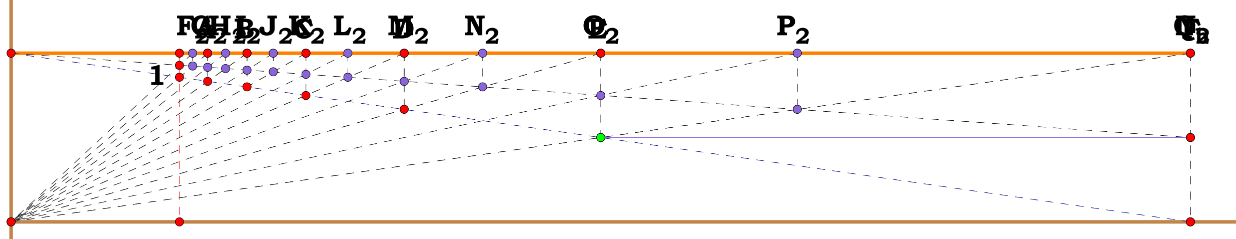
$\frac{N_b}{D} = 3.00000$

$\frac{N_b}{E} = 2.00000$

$\frac{N_b}{F} = 1.00000$

Present 2 Actions

Present 2 Actions



$\frac{numerator}{denominator} = 1.00000$

numerator = 1.00000

denominator = 1.00000

$N_a = 1.00000$

$N_b = 7.00000$

num

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

den

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

Home Point
A Point
B Point
C Point
D Point
E Point
F Point

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

$\frac{N_b}{F_2} = 6.50000$

$\frac{N_b}{G_2} = 6.00000$

$\frac{N_b}{H_2} = 5.50000$

$\frac{N_b}{I_2} = 5.00000$

$\frac{N_b}{J_2} = 4.50000$

$\frac{N_b}{K_2} = 4.00000$

$\frac{N_b}{L_2} = 3.50000$

$\frac{N_b}{M_2} = 3.00000$

$\frac{N_b}{N_2} = 2.50000$

$\frac{N_b}{O_2} = 2.00000$

$\frac{N_b}{P_2} = 1.50000$

$\frac{N_b}{Q_2} = 1.00000$

$F_2 = 1.07692$

$G_2 = 1.16667$

$H_2 = 1.27273$

$I_2 = 1.40000$

$J_2 = 1.55556$

$K_2 = 1.75000$

$L_2 = 2.00000$

$M_2 = 2.33333$

$N_2 = 2.80000$

$O_2 = 3.50000$

$P_2 = 4.66667$

$Q_2 = 7.00000$

Recursive division using the first series points on the operational tail.

Show Intersection

Index is Base 0

$I_{ndx} = 0$

$N_b - \frac{I_{ndx}}{N_a} = 7.00000$

$\frac{(I_{ndx} - N_a \cdot N_b) \cdot ((I_{ndx} - N_a \cdot N_b) + 1)}{N_a} = 42.0000$

$N_a \cdot N_b - N_a = 6.00000$

Present 2 Actions

Present 2 Actions

$\frac{\text{numerator}}{\text{denominator}} = 1.00000$

numerator = 1.00000

denominator = 1.00000

$N_a = 1.00000$

$N_b = 7.00000$

num **den**

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

Home Point
A Point
B Point
C Point
D Point
E Point
F Point

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

Show Intersection

$\frac{N_b}{1} = 7.00000$

$\frac{N_b}{A} = 6.00000$

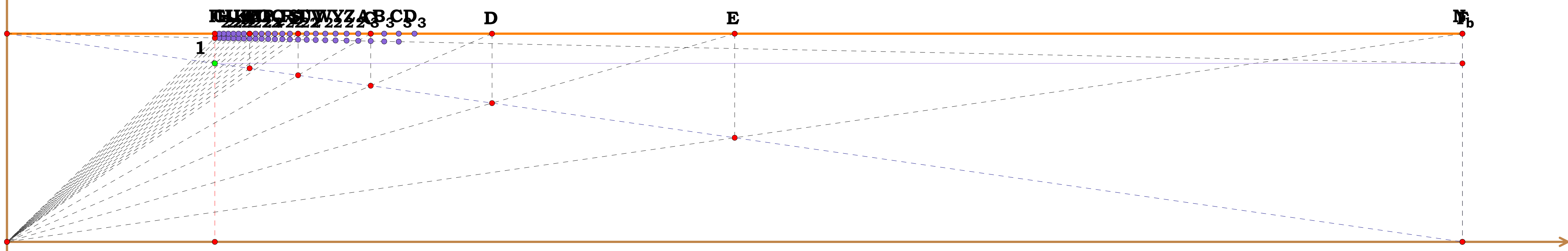
$\frac{N_b}{B} = 5.00000$

$\frac{N_b}{C} = 4.00000$

$\frac{N_b}{D} = 3.00000$

$\frac{N_b}{E} = 2.00000$

$\frac{N_b}{F} = 1.00000$



$\frac{N_b}{F_2} = 6.85714$

$\frac{N_b}{G_2} = 6.71429$

$\frac{N_b}{H_2} = 6.57143$

$\frac{N_b}{I_2} = 6.42857$

$\frac{N_b}{J_2} = 6.28571$

$\frac{N_b}{K_2} = 6.14286$

$\frac{N_b}{L_2} = 6.00000$

$\frac{N_b}{M_2} = 5.85714$

$\frac{N_b}{N_2} = 5.71429$

$\frac{N_b}{O_2} = 5.57143$

$\frac{N_b}{P_2} = 5.42857$

$\frac{N_b}{Q_2} = 5.28571$

$\frac{N_b}{R_2} = 5.14286$

$\frac{N_b}{S_2} = 5.00000$

$\frac{N_b}{T_2} = 4.85714$

$\frac{N_b}{U_2} = 4.71429$

$\frac{N_b}{V_2} = 4.57143$

$\frac{N_b}{W_2} = 4.42857$

$\frac{N_b}{Y_2} = 4.28571$

$\frac{N_b}{Z_2} = 4.14286$

$\frac{N_b}{A_3} = 4.00000$

$\frac{N_b}{B_3} = 3.85714$

$\frac{N_b}{C_3} = 3.71429$

$\frac{N_b}{D_3} = 3.57143$

$F_2 = 1.02083$
$G_2 = 1.04255$
$H_2 = 1.06522$
$I_2 = 1.08889$
$J_2 = 1.11364$
$K_2 = 1.13953$
$L_2 = 1.16667$
$M_2 = 1.19512$
$N_2 = 1.22500$

$O_2 = 1.25641$
$P_2 = 1.28947$
$Q_2 = 1.32432$
$R_2 = 1.36111$
$S_2 = 1.40000$
$T_2 = 1.44118$
$U_2 = 1.48485$
$V_2 = 1.53125$
$W_2 = 1.58065$

$Y_2 = 1.63333$
$Z_2 = 1.68966$
$A_3 = 1.75000$
$B_3 = 1.81481$
$C_3 = 1.88462$
$D_3 = 1.96000$

Recursive division using the first series points on the operational tail.

Construction:

Index = 1

Frac. mult. $$\frac{(1-N_2)\cdot\text{Index}+N_1\cdot N_2\cdot N_3}{N_1\cdot N_3} = 6.74335$$

# of fracs. $N_1\cdot N_3 = 8.00000$

len of frac. $$\frac{N_1\cdot N_2\cdot N_3}{N_1\cdot N_2\cdot N_3-\text{Index}\cdot(N_2-1)} = 1.12167$$

num of div. for frac. $$\frac{(\text{Index}\cdot(1-N_2)+N_1\cdot N_2\cdot N_3)\cdot((N_2+\text{Index}\cdot(1-N_2)+N_1\cdot N_2\cdot N_3)-1)}{N_1\cdot N_3\cdot(N_2-1)} = 62.16558$$

$N_1 = 4.00000$

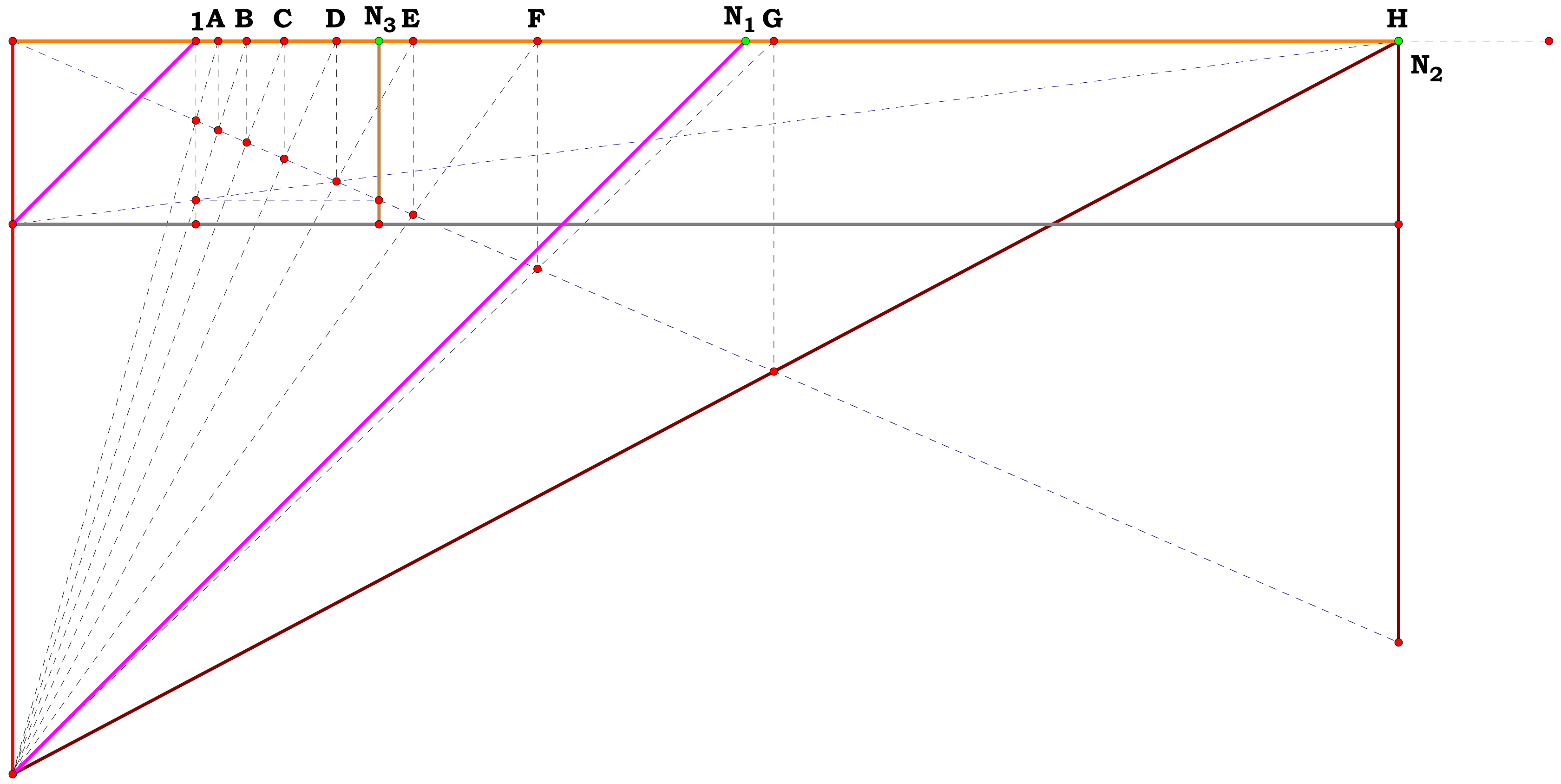
$N_3 = 2.00000$

$N_2 = 7.56383$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11



$\frac{N_2}{1} = 6.76866$ $\frac{N_2}{E} = 4.84577$ $\frac{N_2}{J} = 2.92289$ $\frac{N_2}{O} = 1.00000$

$\frac{N_2}{A} = 6.38408$ $\frac{N_2}{F} = 4.46119$ $\frac{N_2}{K} = 2.53831$

$\frac{N_2}{B} = 5.99950$ $\frac{N_2}{G} = 4.07662$ $\frac{N_2}{L} = 2.15373$

$\frac{N_2}{C} = 5.61492$ $\frac{N_2}{H} = 3.69204$ $\frac{N_2}{M} = 1.76915$

$\frac{N_2}{D} = 5.23035$ $\frac{N_2}{I} = 3.30746$ $\frac{N_2}{N} = 1.38458$

Index = 1

Frac. mult. $\frac{(1-N_2)\cdot Index+N_1\cdot N_2\cdot N_3}{N_1\cdot N_3} = 6.38408$

# of fracs. $N_1\cdot N_3 = 15.00000$

len of frac. $\frac{N_1\cdot N_2\cdot N_3}{N_1\cdot N_2\cdot N_3-Index\cdot(N_2-1)} = 1.06024$

$\frac{N_2}{A-1} = 112.36144$

num of div. for frac. $\frac{(Index\cdot(1-N_2)+N_1\cdot N_2\cdot N_3)\cdot((N_2+Index\cdot(1-N_2)+N_1\cdot N_2\cdot N_3)-1)}{N_1\cdot N_3\cdot(N_2-1)} = 112.36144$

$N_1 = 3.00000$

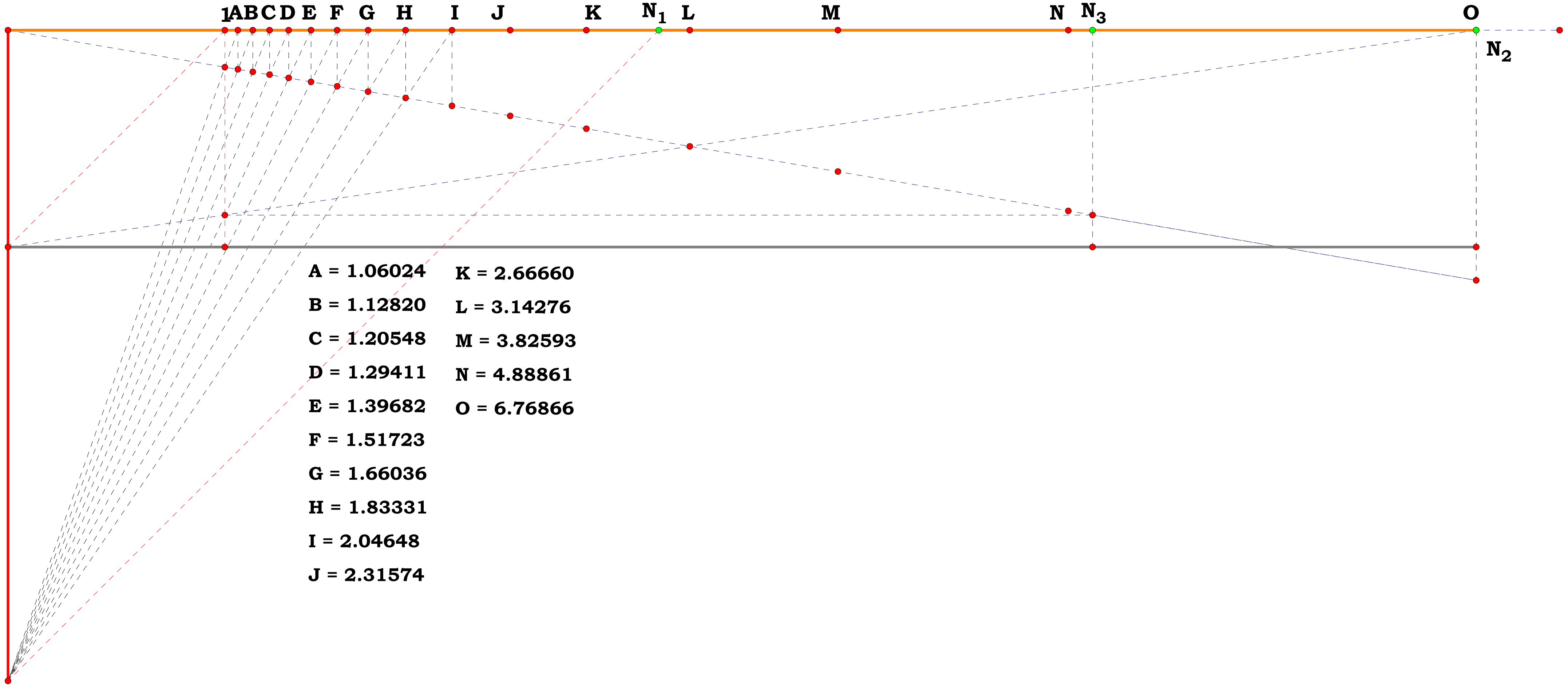
$N_3 = 5.00000$

$N_2 = 6.76866$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11



A = 1.06024
B = 1.12820
C = 1.20548
D = 1.29411
E = 1.39682
F = 1.51723
G = 1.66036
H = 1.83331
I = 2.04648
J = 2.31574

K = 2.66660
L = 3.14276
M = 3.82593
N = 4.88861
O = 6.76866

Hide Objects
Hide Objects
Show Intersections
Show Intersections

$$\frac{(i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3)\cdot(((N_2-i_{dx}\cdot N_2-N_0\cdot N_2)+i_{dx}\cdot N_0\cdot N_2)-N_0\cdot N_1\cdot N_3)}{N_1\cdot N_3\cdot(((N_2+i_{dx}\cdot(N_2-N_0\cdot N_2))-i_{dx}\cdot N_2-N_0\cdot N_2)+i_{dx}\cdot N_0\cdot N_2)} = 45.55556$$

$$\frac{N_0\cdot N_1\cdot N_3}{i_{dx}\cdot(N_2-N_2\cdot N_0)+N_0\cdot N_1\cdot N_3} = 1.21951$$

$i_{dx} = 1$

$$\frac{i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3}{N_1\cdot N_3} = 8.20000$$

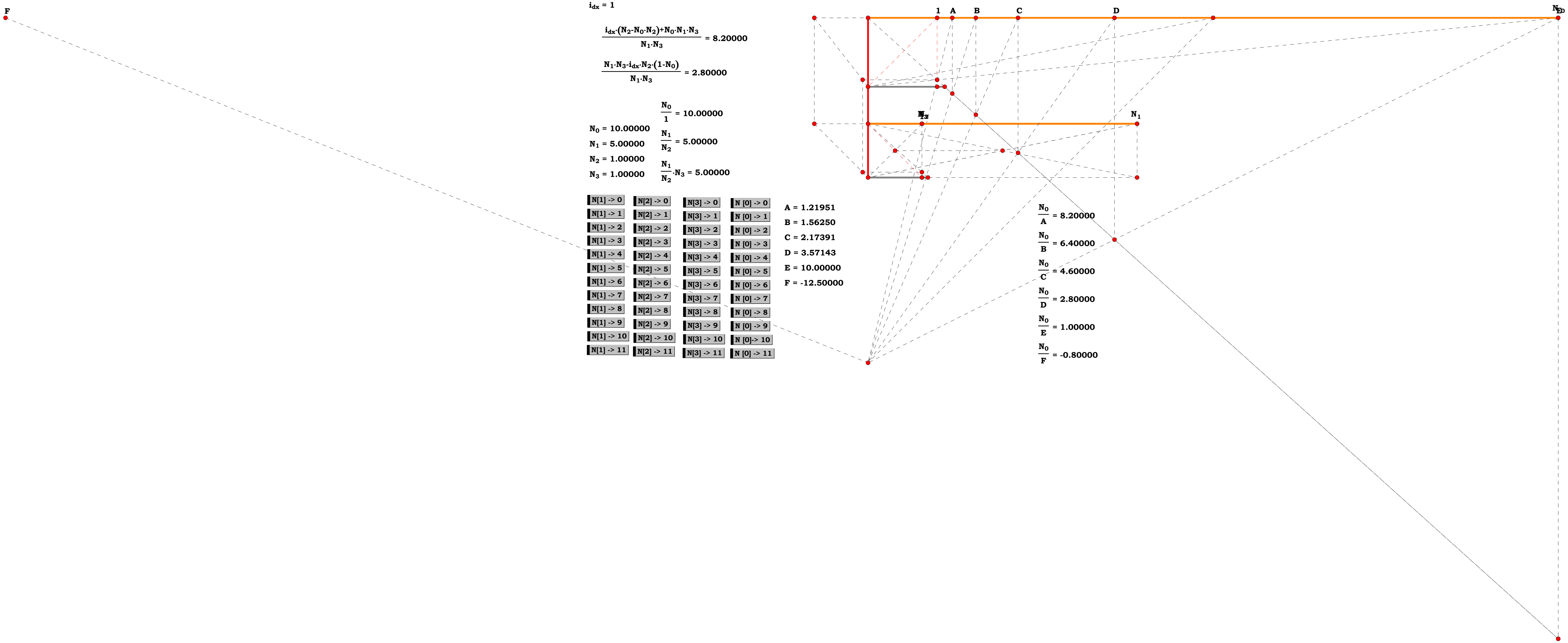
$$\frac{N_1\cdot N_3-i_{dx}\cdot N_2\cdot(1-N_0)}{N_1\cdot N_3} = 2.80000$$

$$\frac{N_0}{1} = 10.00000$$

$N_0 = 10.00000$
$N_1 = 5.00000$
$N_2 = 1.00000$
$N_3 = 1.00000$

$$\frac{N_1}{N_2} = 5.00000$$

$$\frac{N_1}{N_2}\cdot N_3 = 5.00000$$



N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

N [0] -> 0
N [0] -> 1
N [0] -> 2
N [0] -> 3
N [0] -> 4
N [0] -> 5
N [0] -> 6
N [0] -> 7
N [0] -> 8
N [0] -> 9
N [0]-> 10
N [0] -> 11

A = 1.21951
B = 1.56250
C = 2.17391
D = 3.57143
E = 10.00000
F = -12.50000

$$\frac{N_0}{A} = 8.20000$$

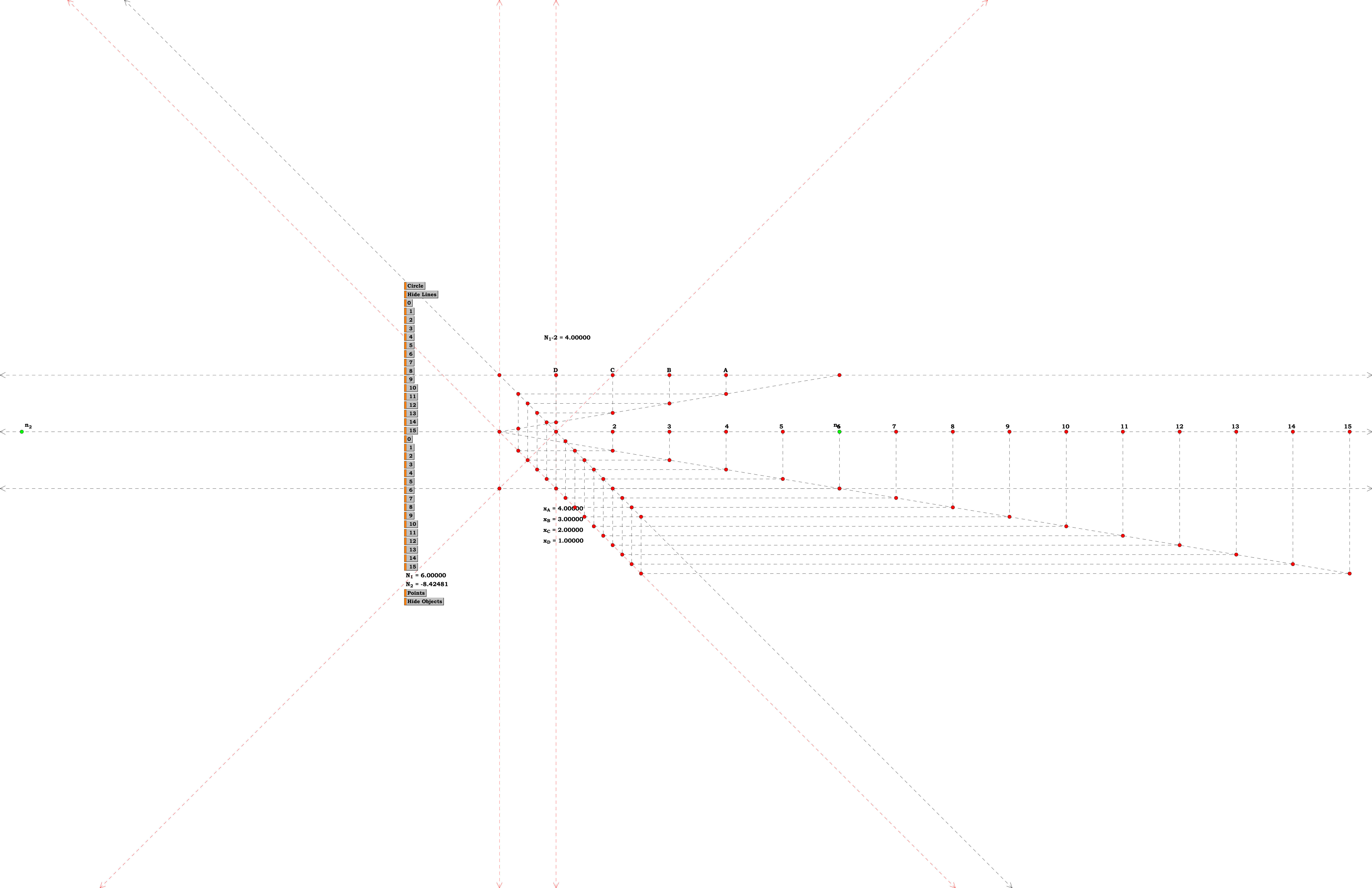
$$\frac{N_0}{B} = 6.40000$$

$$\frac{N_0}{C} = 4.60000$$

$$\frac{N_0}{D} = 2.80000$$

$$\frac{N_0}{E} = 1.00000$$

$$\frac{N_0}{F} = -0.80000$$



N_1-2 = 4.00000

x_A = 4.00000
x_B = 3.00000
x_C = 2.00000
x_D = 1.00000

N_1 = 6.00000
N_2 = -8.42481

Circle

Hide Lines

0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

$N_1 = 6.00000$

$N_2 = 3.00000$

$I_1 = 2$

$N_1 \cdot N_2 = 18.00000$

$N_1{}^2 \cdot N_2 = 108.00000$

$(N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1) = 98.00000$

$(N_1 \cdot N_2) - I_1 \cdot (1 - N_1) = 28.00000$

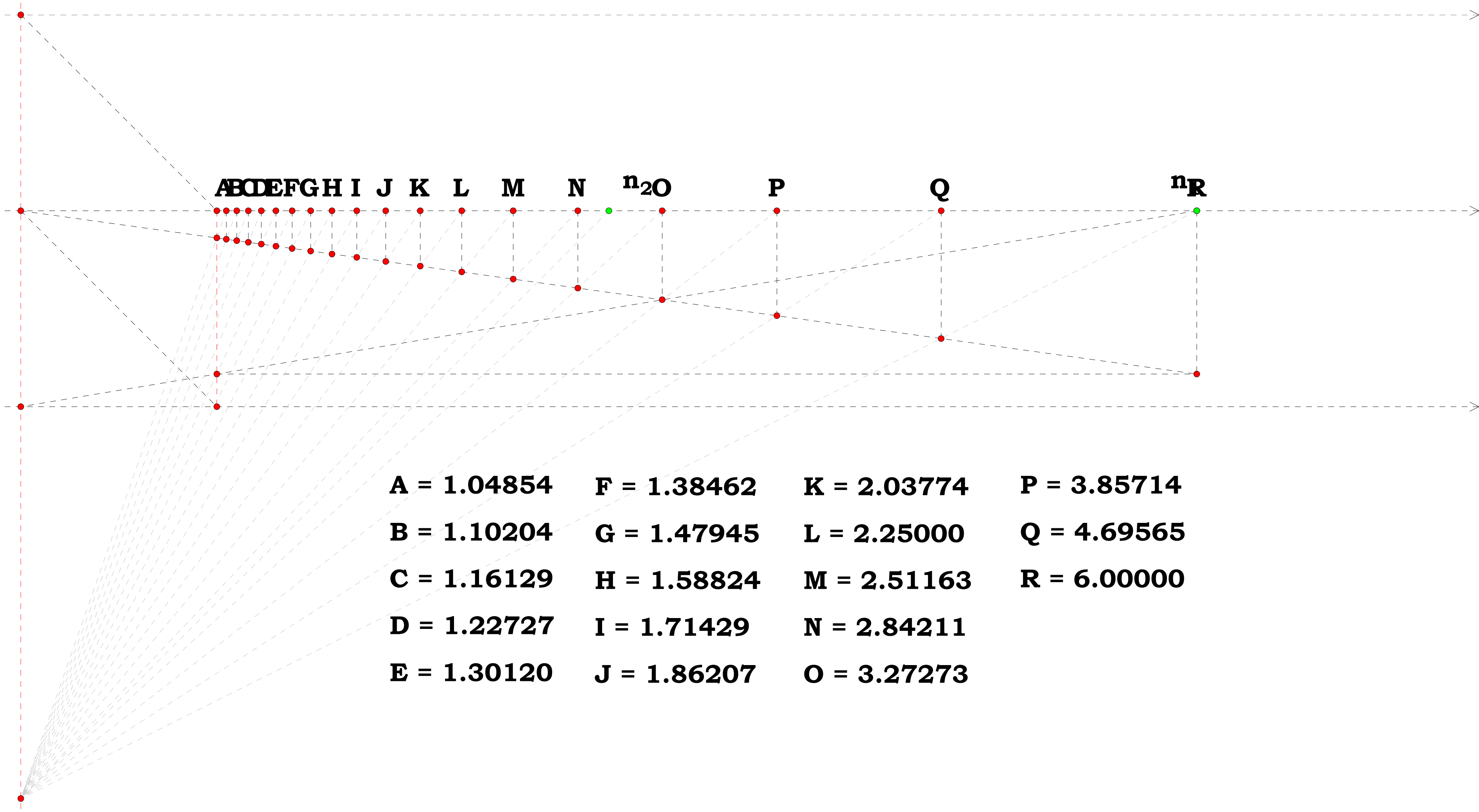
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

$$\frac{(N_1{}^2 \cdot N_2)}{((N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1))} = 1.10204$$

$$\frac{(N_1{}^2 \cdot N_2)}{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))} = 3.85714$$

$$\frac{((N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1))}{(N_1 \cdot N_2)} = 5.44444$$

$$\frac{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))}{(N_1 \cdot N_2)} = 1.55556$$



A = 1.04854
B = 1.10204
C = 1.16129
D = 1.22727
E = 1.30120
F = 1.38462
G = 1.47945
H = 1.58824
I = 1.71429
J = 1.86207
K = 2.03774
L = 2.25000
M = 2.51163
N = 2.84211
O = 3.27273
P = 3.85714
Q = 4.69565
R = 6.00000

Points

Ratio Projections

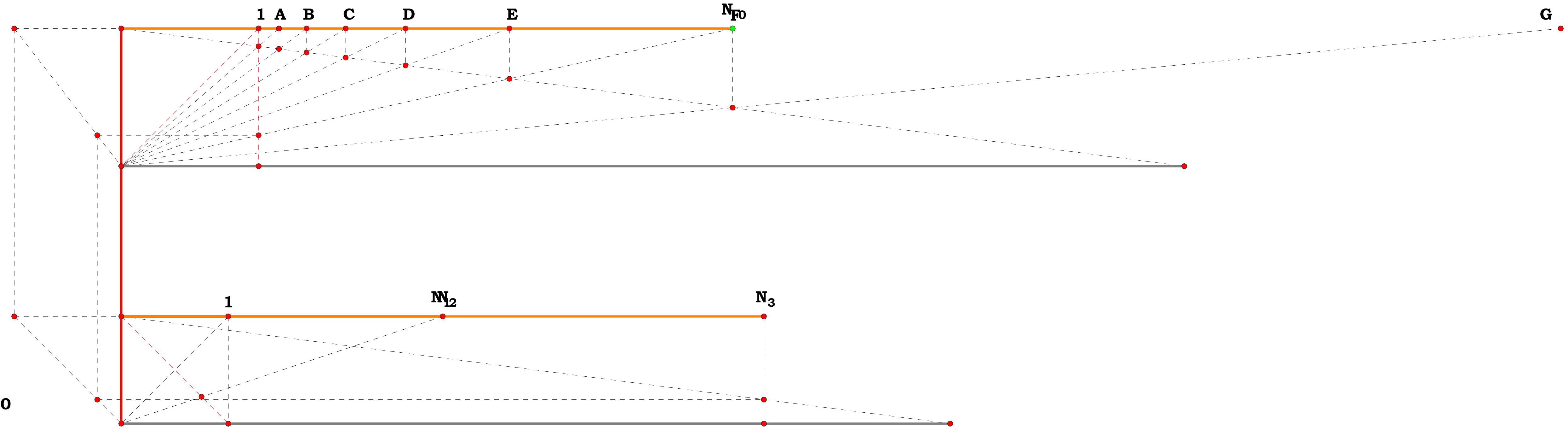
$i_{dx} = 1$

$$\frac{(i_{dx} \cdot (N_2 - N_0 \cdot N_2) + N_0 \cdot N_1 \cdot N_3) \cdot (((N_2 - i_{dx} \cdot N_2 - N_0 \cdot N_2) + i_{dx} \cdot N_0 \cdot N_2) - N_0 \cdot N_1 \cdot N_3)}{N_1 \cdot N_3 \cdot (((N_2 + i_{dx} \cdot (N_2 - N_0 \cdot N_2)) - i_{dx} \cdot N_2 - N_0 \cdot N_2) + i_{dx} \cdot N_0 \cdot N_2)} = 29.99580$$

$$\frac{(i_{dx} \cdot (N_2 - N_0 \cdot N_2) + N_0 \cdot N_1 \cdot N_3)}{(N_1 \cdot N_3)} + \frac{N_1 \cdot N_3 - i_{dx} \cdot N_2 \cdot (1 - N_0)}{N_1 \cdot N_3} = 5.45148$$

$$\frac{N_0 \cdot N_1 \cdot N_3}{i_{dx} \cdot (N_2 - N_2 \cdot N_0) + N_0 \cdot N_1 \cdot N_3} = 1.14840$$

$$\frac{N_1 \cdot N_3 - i_{dx} \cdot N_2 \cdot (1 - N_0)}{N_1 \cdot N_3} = 1.57525$$



Total number of fractions.

$$\frac{N_1 \cdot N_3}{N_2} = 6.00000$$

Fraction at Index:

Num: $i_{dx} \cdot (N_2 - N_0 \cdot N_2) + N_0 \cdot N_1 \cdot N_3 = 69.77224$

Den: $N_1 \cdot N_3 = 18.00000$

$$\frac{(i_{dx} \cdot (N_2 - N_0 \cdot N_2) + N_0 \cdot N_1 \cdot N_3)}{(N_1 \cdot N_3)} = 3.87624$$

$N_0 = 4.45148$

$N_1 = 3.00000$

$N_2 = 3.00000$

$N_3 = 6.00000$

$N_1 \cdot N_3 = 18.00000$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

N [0] -> 0
N [0] -> 1
N [0] -> 2
N [0] -> 3
N [0] -> 4
N [0] -> 5
N [0] -> 6
N [0] -> 7
N [0] -> 8
N [0] -> 9
N [0]-> 10
N [0] -> 11

A = 1.14840
B = 1.34853
C = 1.63313
D = 2.06998
E = 2.82589
F = 4.45148
G = 10.48017

$\frac{N_0}{A} = 3.87624$

$\frac{N_0}{G} = 0.42475$

$\frac{N_0}{B} = 3.30099$

$\frac{N_0}{C} = 2.72574$

$\frac{N_0}{D} = 2.15049$

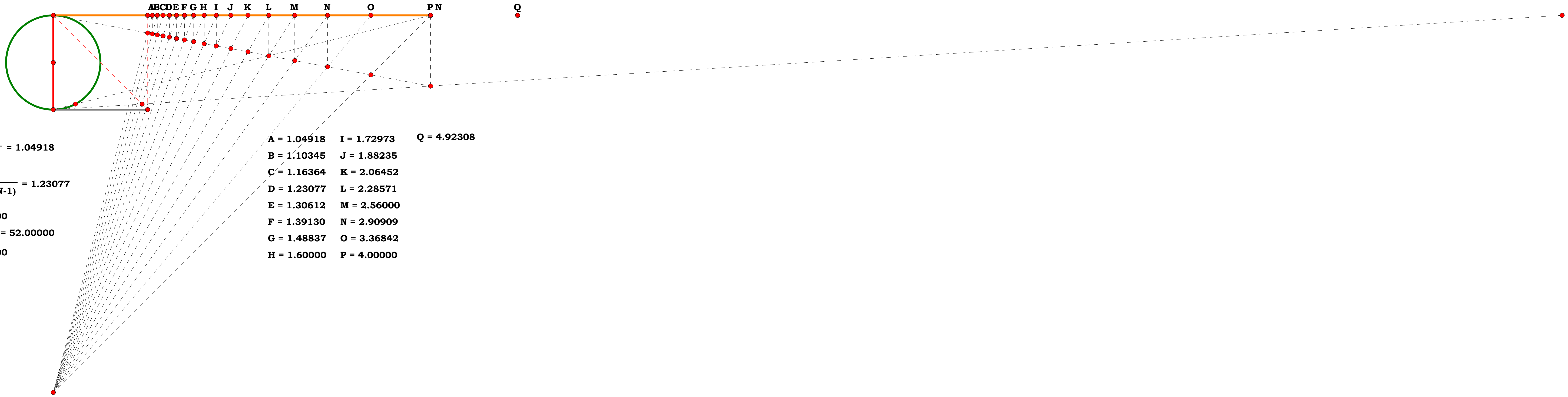
$\frac{N_0}{E} = 1.57525$

$\frac{N_0}{F} = 1.00000$

N -> 0
N -> 1
N -> 2
N -> 3
N -> 4
N -> 5
N -> 6
N -> 7
N -> 8
N -> 9
N -> 10
N -> 11

$N = 4.00000$

Show Objects



$In_{dx} = 4$

$$\frac{N^3}{(N^3-N)+1} = 1.04918$$

$$\frac{N^3}{N^3-In_{dx}\cdot(N-1)} = 1.23077$$

$N^3 = 64.00000$

$N^3-In_{dx}\cdot(N-1) = 52.00000$

$N^2 = 16.00000$

A = 1.04918
B = 1.10345
C = 1.16364
D = 1.23077
E = 1.30612
F = 1.39130
G = 1.48837
H = 1.60000

I = 1.72973
J = 1.88235
K = 2.06452
L = 2.28571
M = 2.56000
N = 2.90909
O = 3.36842
P = 4.00000

Q = 4.92308

Circle Points Circle Points Circle Points

Show Lines Hide Objects Show Lines Hide Objects Show Lines

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15

$N_1 = 5.00000$

$N_2 = 0.00000$

$n_a = 7.00000$

$n_b = 5.00000$

$r_{da} = 1.40000$

$\frac{n_a}{n_b} = 1.40000$

$N_1 \cdot \frac{n_a}{n_b} = 7.00000$

$n_c = 3.00000$

$n_d = 4.00000$

$r_{db} = 0.75000$

$\frac{n_c}{n_d} = 0.75000$

$\frac{n_c}{n_d} \cdot N_1 = 3.75000$

$In_{dx} = 0$

$\frac{26.25000}{26.25000} = 1.00000$

$B_3 = 6.17647$

$\frac{N_1}{B_3 - N_1} + 1 = 5.25000$

$\frac{7}{3.75} = 1.86667$

$A = 1.03960$

$B = 1.08247$

$C = 1.12903$

$D = 1.17978$

$E = 1.23529$

$F = 1.29630$

$G = 1.36364$

$H = 1.43836$

$I = 1.52174$

$J = 1.61538$

$K = 1.72131$

$L = 1.84211$

$M = 1.98113$

$N = 2.14286$

$O = 2.33333$

$P = 2.56098$

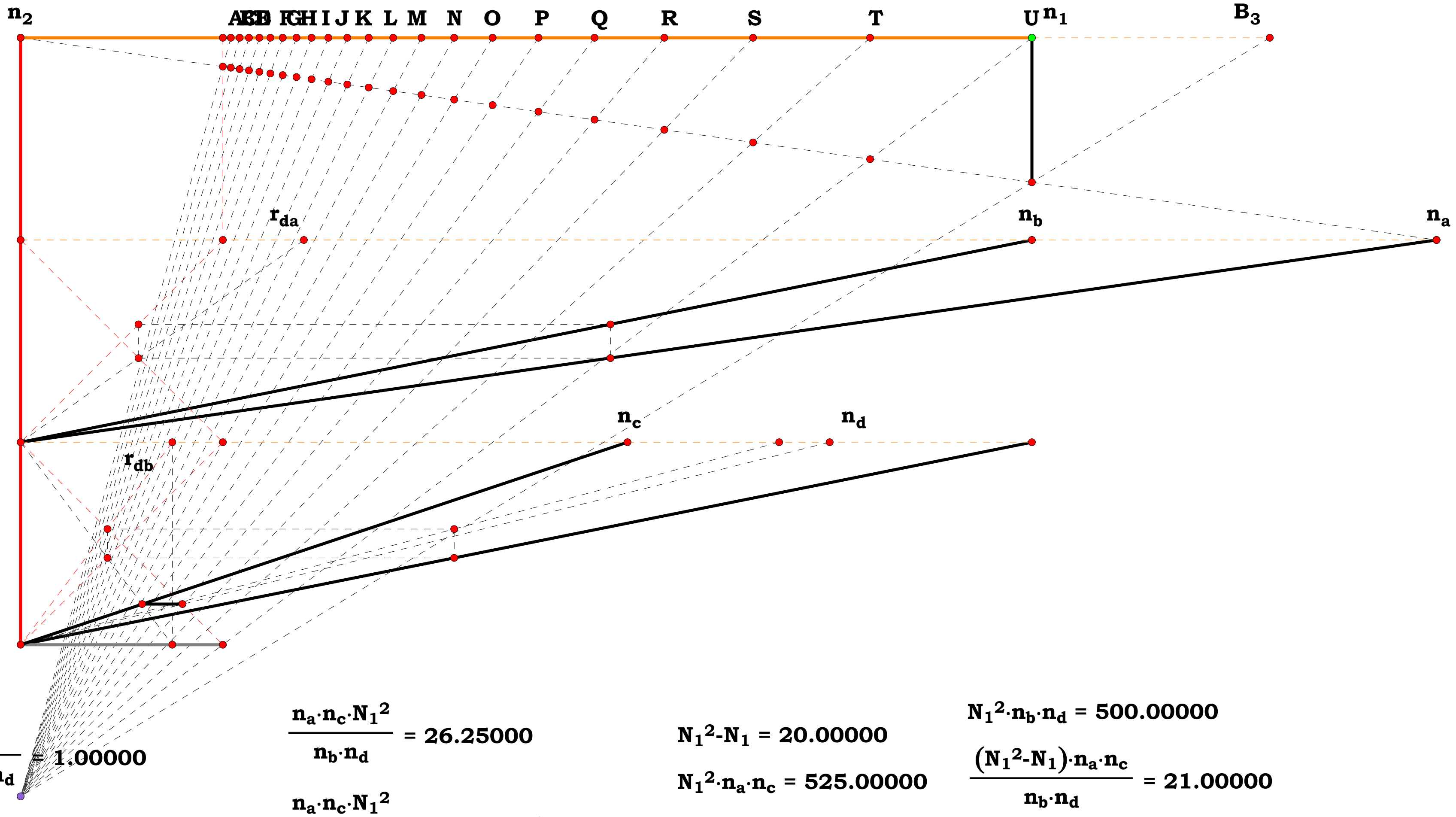
$Q = 2.83784$

$R = 3.18182$

$S = 3.62069$

$T = 4.20000$

$U = 5.00000$



$\frac{N_1^2 \cdot n_a \cdot n_c}{N_1^2 \cdot n_a \cdot n_c - In_{dx} \cdot n_b \cdot n_d} = 1.00000$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} = 26.25000$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} - In_{dx} = 26.25000$

$N_1^2 - N_1 = 20.00000$

$N_1^2 \cdot n_a \cdot n_c = 525.00000$

$N_1^2 \cdot n_b \cdot n_d = 500.00000$

$\frac{(N_1^2 - N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d} = 21.00000$

Circle Points Circle Points Circle Points

Show Lines Hide Objects Show Lines Hide Objects Show Lines

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15

$In_{dx} = 0$

$\frac{26.25000}{26.25000} = 1.00000$

$B_3 = 6.17647$

$\frac{N_1}{B_3 - N_1} + 1 = 5.25000$

$\frac{7}{3.75} = 1.86667$

A = 1.03960
B = 1.08247
C = 1.12903
D = 1.17978
E = 1.23529
F = 1.29630
G = 1.36364
H = 1.43836
I = 1.52174

J = 1.61538
K = 1.72131
L = 1.84211
M = 1.98113
N = 2.14286
O = 2.33333
P = 2.56098
Q = 2.83784
R = 3.18182

S = 3.62069
T = 4.20000
U = 5.00000

$N_1 = 5.00000$

$N_2 = 0.00000$

$n_a = 7.00000$

$n_b = 5.00000$

$r_{da} = 1.40000$

$\frac{n_a}{n_b} = 1.40000$

$N_1 \cdot \frac{n_a}{n_b} = 7.00000$

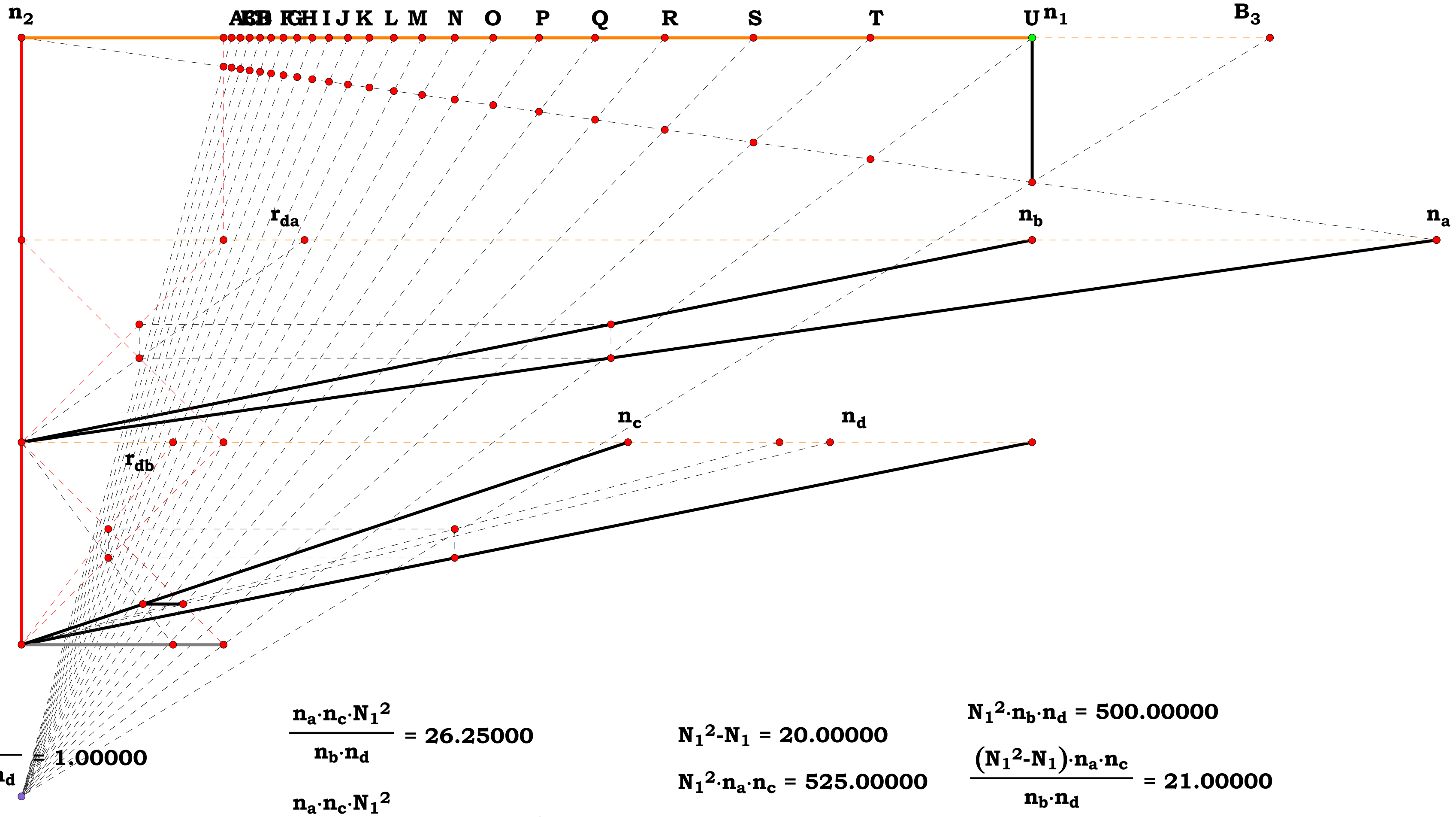
$n_c = 3.00000$

$n_d = 4.00000$

$r_{db} = 0.75000$

$\frac{n_c}{n_d} = 0.75000$

$\frac{n_c}{n_d} \cdot N_1 = 3.75000$



$\frac{N_1^2 \cdot n_a \cdot n_c}{N_1^2 \cdot n_a \cdot n_c - In_{dx} \cdot n_b \cdot n_d} = 1.00000$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} = 26.25000$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} - In_{dx} = 26.25000$

$N_1^2 - N_1 = 20.00000$

$N_1^2 \cdot n_a \cdot n_c = 525.00000$

$N_1^2 \cdot n_b \cdot n_d = 500.00000$

$\frac{(N_1^2 - N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d} = 21.00000$

Circle Points Circle Points Circle Points

Show Lines Hide Objects Show Lines Hide Objects Show Lines

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15

$N_1 = 5.00000$

$N_2 = 0.00000$

$n_a = 7.00000$

$n_b = 5.00000$

$r_{da} = 1.40000$

$\frac{n_a}{n_b} = 1.40000$

$N_1 \cdot \frac{n_a}{n_b} = 7.00000$

$n_c = 3.00000$

$n_d = 4.00000$

$r_{db} = 0.75000$

$\frac{n_c}{n_d} = 0.75000$

$\frac{n_c}{n_d} \cdot N_1 = 3.75000$

$In_{dx} = 0$

$\frac{26.25000}{26.25000} = 1.00000$

$B_3 = 6.17647$

$\frac{N_1}{B_3 - N_1} + 1 = 5.25000$

$\frac{7}{3.75} = 1.86667$

$A = 1.03960$

$B = 1.08247$

$C = 1.12903$

$D = 1.17978$

$E = 1.23529$

$F = 1.29630$

$G = 1.36364$

$H = 1.43836$

$I = 1.52174$

$J = 1.61538$

$K = 1.72131$

$L = 1.84211$

$M = 1.98113$

$N = 2.14286$

$O = 2.33333$

$P = 2.56098$

$Q = 2.83784$

$R = 3.18182$

$S = 3.62069$

$T = 4.20000$

$U = 5.00000$

$26.25 + 5.25 = 31.50000$

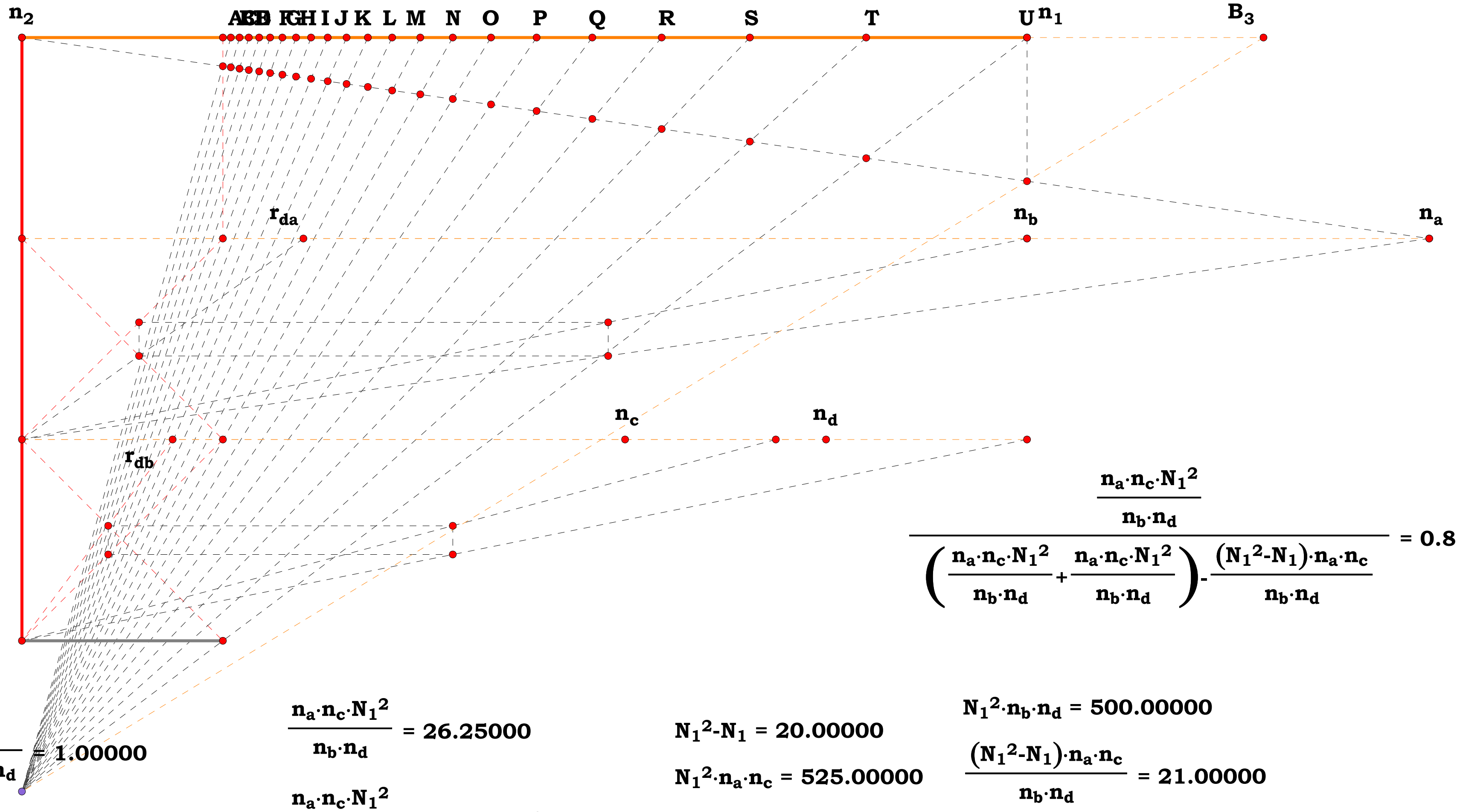
$25.25 + 6.25 = 31.50000$

$24.25 + 7.25 = 31.50000$

$\frac{26.25}{(26.25 + 5.25)} = 0.83333$

$\frac{26.25}{(25.25 + 6.25)} = 0.83333$

$\frac{26.25}{(24.25 + 7.25)} = 0.83333$



$\frac{N_1^2 \cdot n_a \cdot n_c}{N_1^2 \cdot n_a \cdot n_c - In_{dx} \cdot n_b \cdot n_d} = 1.00000$

$$\frac{\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d}}{\left(\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} + \frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d}\right) - \frac{(N_1^2 - N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d}} = 0.83333$$

$\frac{N_1}{N_1 + 1} = 0.83333$

$\frac{m_3}{m_3 - 1} = 1.03960$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} = 26.25000$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} - In_{dx} = 26.25000$

$N_1^2 - N_1 = 20.00000$

$N_1^2 \cdot n_a \cdot n_c = 525.00000$

$N_1^2 \cdot n_b \cdot n_d = 500.00000$

$\frac{(N_1^2 - N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d} = 21.00000$

Circle

Show Lines

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Hide Objects

Hide Objects

Hide Objects

Hide Objects

Hide Objects

$N_1 = 4.00000$

Points

$N_1 = 4.00000$

$$\frac{N_1^2}{N_1^2 - I_{ndx} \cdot (N_1 - 1)} = 4.00000$$

$I_{ndx} = 4$

$N_1 \cdot (N_1 - 1) + 1 = 13.00000$

$$\frac{N_1^3 - N_1 \cdot (N_1 - 1)}{N_1^3 - (N_1 - 1) \cdot (N_1 + I_{ndx})} = 1.30000$$

$L = 1.06122$

$M = 1.13043$

$N = 1.20930$

$O = 1.30000$

$P = 1.40541$

$Q = 1.52941$

$R = 1.67742$

$S = 1.85714$

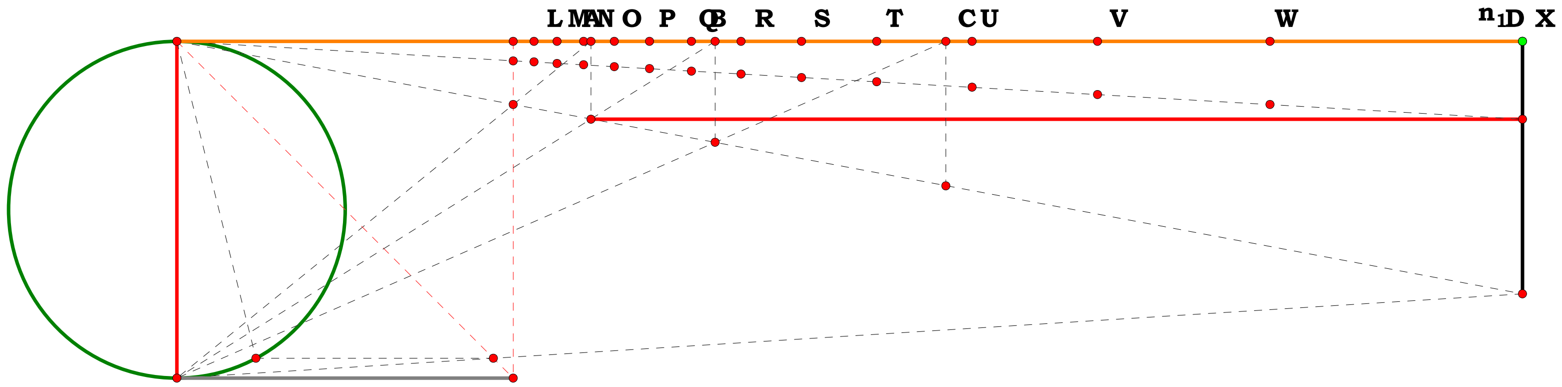
$T = 2.08000$

$U = 2.36364$

$V = 2.73684$

$W = 3.25000$

$X = 4.00000$

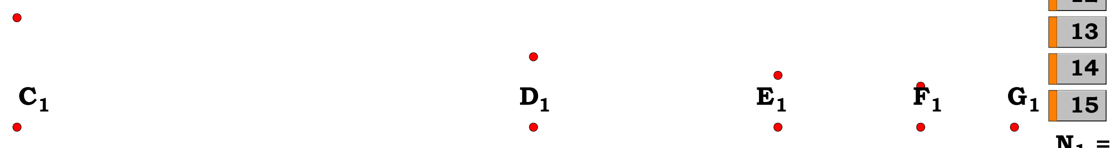


$A = 1.23077$

$B = 1.60000$

$C = 2.28571$

$D = 4.00000$



Circle

Show Lines

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

$N_1 = 6.00000$

Points

Hide Objects

Hide Objects

Hide Objects

Hide Objects

$I_{ndx} = 3$

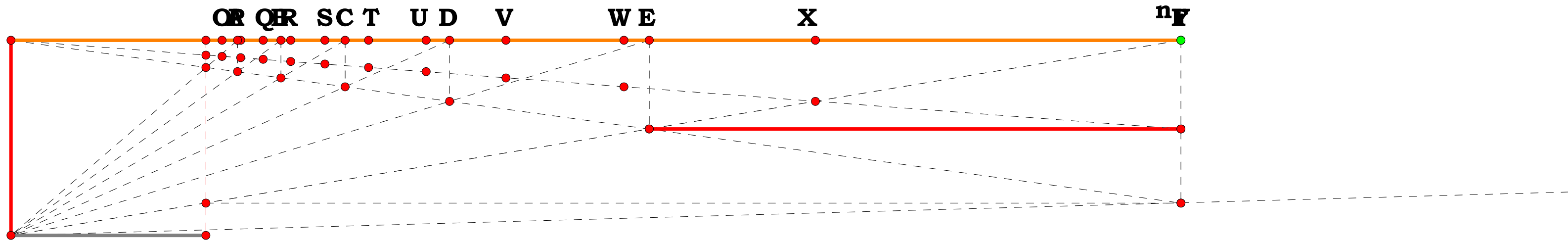
$$\frac{N_1^2}{N_1^2 - I_{ndx}\cdot(N_1-1)} = 1.71429$$

$$\frac{2\cdot N_1^2 - N_1}{(2\cdot N_1^2 - I_{ndx}\cdot N_1 - N_1) + I_{ndx}} = 1.29412$$

O = 1.08197
P = 1.17857
Q = 1.29412
R = 1.43478
S = 1.60976
T = 1.83333
U = 2.12903

V = 2.53846
W = 3.14286
X = 4.12500
Y = 6.00000
Z = 11.00000
x_{A_1} = 66.00000
x_{B_1} = -16.50000

x_{C_1} = -7.33333
x_{D_1} = -4.71429
x_{E_1} = -3.47368
x_{F_1} = -2.75000
x_{G_1} = -2.27586



A = 1.16129
B = 1.38462
C = 1.71429
D = 2.25000
E = 3.27273
F = 6.00000
G = 36.00000

Circle

Show Lines

0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

$N_1 = 5.00000$

Points

Circle

Show Lines

0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

$n_3 = 4.00000$

Points

$I_{ndx} = 3$

$N_1 \cdot n_3 = 20.00000$

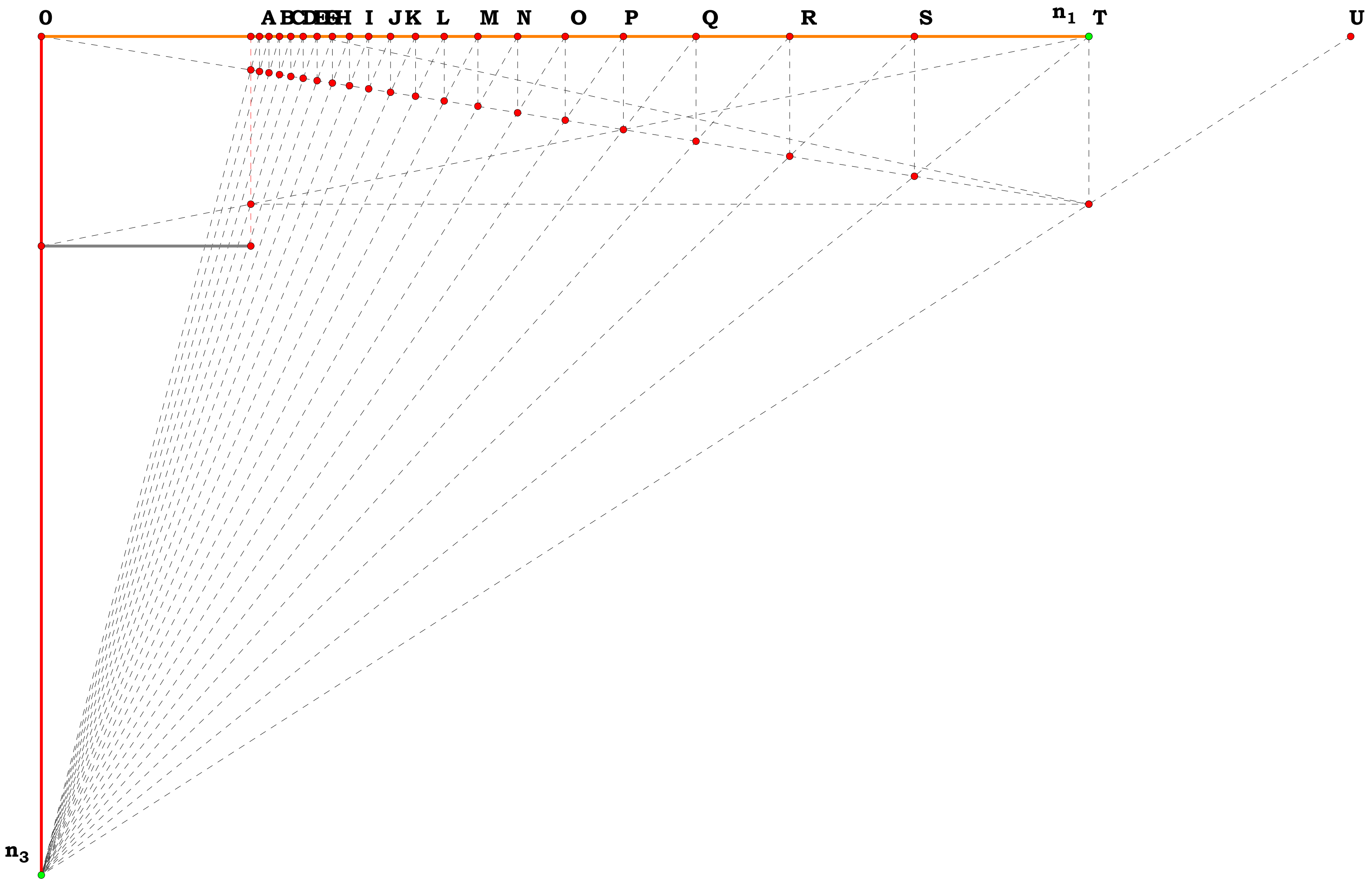
$N_1^2 \cdot n_3 = 100.00000$

$N_1^2 \cdot n_3 - I_{ndx} \cdot (N_1 - 1) = 88.00000$

$$\frac{(N_1^2 \cdot n_3)}{(N_1^2 \cdot n_3 - I_{ndx} \cdot (N_1 - 1))} = 1.13636$$

A = 1.04167
B = 1.08696
C = 1.13636
D = 1.19048
E = 1.25000
F = 1.31579
G = 1.38889
H = 1.47059
I = 1.56250
J = 1.66667
K = 1.78571

L = 1.92308
M = 2.08333
N = 2.27273
O = 2.50000
P = 2.77778
Q = 3.12500
R = 3.57143
S = 4.16667
T = 5.00000
U = 6.25000



Index is Base 0

Indexs: $I_{ndx} = 8$ $C_{indx} = 1.00000$

Number of div. by difference at an index.

$$\frac{(I_{ndx} \cdot N_2 - N_1 \cdot N_3) \cdot ((I_{ndx} \cdot N_2 + N_2) - N_1 \cdot N_3)}{N_1 \cdot N_2} = 0.00000$$

Total number of fractions.

$$\frac{N_1 \cdot N_3}{N_2} = 9.00000 \qquad \frac{N_1 \cdot N_3}{N_2} = 9.00000$$

Fraction at Index:

Num: $N_1 \cdot N_3 - I_{ndx} \cdot N_2 = 2.00000$

Den: $N_1 = 3.00000$

$$\frac{(N_1 \cdot N_3 - I_{ndx} \cdot N_2)}{N_1} = 0.66667$$

Fraction at Compliment:

$$\frac{N_1 \cdot N_3 - C_{indx} \cdot N_2}{N_1} = 5.33333$$

$$\frac{(N_1 \cdot N_3 - I_{ndx} \cdot N_2)}{N_1} + \frac{N_1 \cdot N_3 - C_{indx} \cdot N_2}{N_1} = 6.00000$$

- N[1] -> 0
- N[1] -> 1
- N[1] -> 2
- N[1] -> 3
- N[1] -> 4
- N[1] -> 5
- N[1] -> 6
- N[1] -> 7
- N[1] -> 8
- N[1] -> 9
- N[1] -> 10
- N[1] -> 11

- N[2] -> 0
- N[2] -> 1
- N[2] -> 2
- N[2] -> 3
- N[2] -> 4
- N[2] -> 5
- N[2] -> 6
- N[2] -> 7
- N[2] -> 8
- N[2] -> 9
- N[2] -> 10
- N[2] -> 11

$N_1 = 3.00000$

$N_2 = 2.00000$

$N_3 = 6.00000$

Present 2 Actions

$$\frac{N_3}{N_3+1} = 0.85714$$

- N[2] -> 0
- N[2] -> 1
- N[2] -> 2
- N[2] -> 3
- N[2] -> 4
- N[2] -> 5
- N[2] -> 6
- N[2] -> 7
- N[2] -> 8
- N[2] -> 9
- N[2] -> 10
- N[2] -> 11

$\frac{N_3}{1} = 6.00000$

$\frac{N_3}{A} = 5.33333$

$\frac{N_3}{B} = 4.66667$

$\frac{N_3}{C} = 4.00000$

$\frac{N_3}{D} = 3.33333$

$\frac{N_3}{E} = 2.66667$

$\frac{N_3}{F} = 2.00000$

$\frac{N_3}{G} = 1.33333$

$O_2 = 6.00000$ $I_2 = 2.00000$

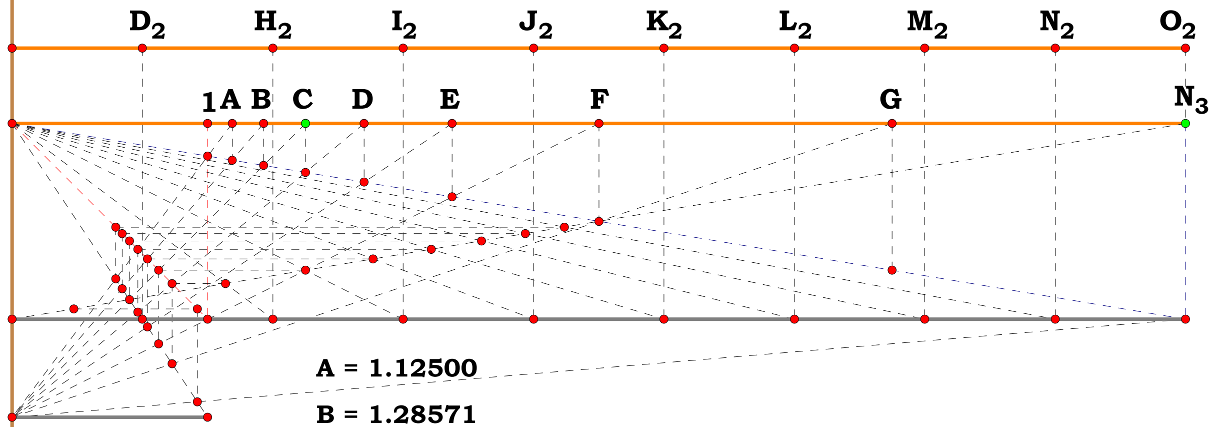
$N_2 = 5.33333$ $H_2 = 1.33333$

$M_2 = 4.66667$

$L_2 = 4.00000$

$K_2 = 3.33333$

$J_2 = 2.66667$ $D_2 = 0.66667$



A = 1.12500

B = 1.28571

C = 1.50000

D = 1.80000

E = 2.25000

F = 3.00000

G = 4.50000

Indexs: Index = 2 $C_{indx} = 7.00$

Number of div. by difference at an index.

$$\frac{(Index\cdot(1-N_3)+N_1\cdot N_2\cdot N_3)\cdot((N_3+Index\cdot(1-N_3)+N_1\cdot N_2\cdot N_3)-1)}{N_1\cdot N_2\cdot(N_3-1)} = 40.85000$$

len of frac. $\frac{N_1\cdot N_2\cdot N_3}{N_1\cdot N_2\cdot N_3-Index\cdot(N_3-1)} = 1.26316$

Total number of fractions.

$N_1\cdot N_2+1 = 9.00000$

Fraction at Index:

Num: $N_1\cdot N_2\cdot N_3-Index\cdot(N_3-1) = 38.00000$

Den: $N_1\cdot N_2 = 8.00000$

$$\frac{(N_1\cdot N_2\cdot N_3-Index\cdot(N_3-1))}{(N_1\cdot N_2)} = 4.75000$$

Fraction at Compliment:

$$\frac{N_1\cdot N_2\cdot N_3-C_{indx}\cdot(N_3-1)}{N_1\cdot N_2} = 1.62500$$

$$\frac{(N_3-C_{indx}\cdot N_3-Index\cdot N_3)+2\cdot N_1\cdot N_2\cdot N_3}{N_1\cdot N_2} = 6.00000$$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

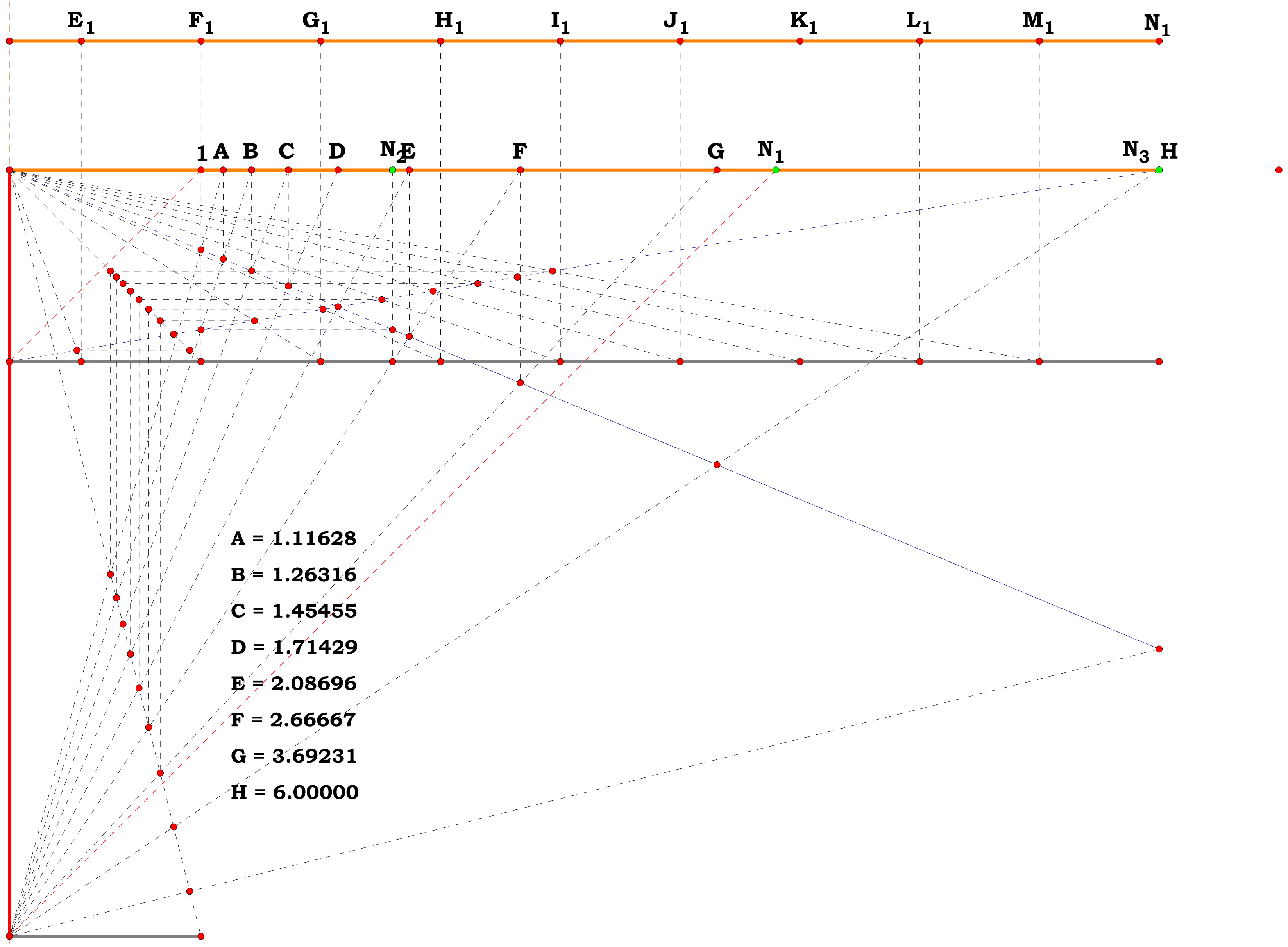
N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

$N_1 = 4.00000$
$N_2 = 2.00000$
$N_3 = 6.00000$

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

$\frac{N_3}{1} = 6.00000$
$\frac{N_3}{A} = 5.37500$
$\frac{N_3}{B} = 4.75000$
$\frac{N_3}{C} = 4.12500$
$\frac{N_3}{D} = 3.50000$
$\frac{N_3}{E} = 2.87500$
$\frac{N_3}{F} = 2.25000$
$\frac{N_3}{G} = 1.62500$
$\frac{N_3}{H} = 1.00000$

$N_1 = 6.00000$
$M_1 = 5.37500$
$L_1 = 4.75000$
$K_1 = 4.12500$
$J_1 = 3.50000$
$I_1 = 2.87500$
$H_1 = 2.25000$
$G_1 = 1.62500$
$F_1 = 1.00000$
$E_1 = 0.37500$



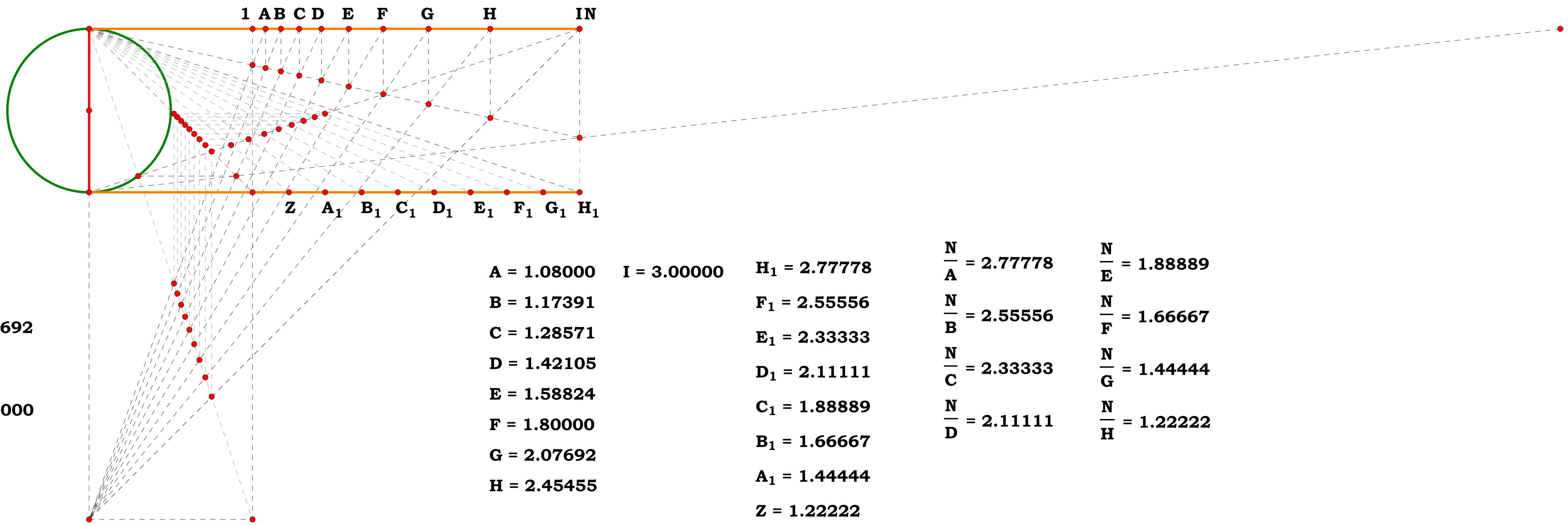
A = 1.11628
B = 1.26316
C = 1.45455
D = 1.71429
E = 2.08696
F = 2.66667
G = 3.69231
H = 6.00000

$x_{H_1} = 3.00000$

N -> 0
N -> 1
N -> 2
N -> 3
N -> 4
N -> 5
N -> 6
N -> 7
N -> 8
N -> 9
N -> 10
N -> 11

N = 3.00000

Show Objects



$In_{dx} = 7$

$$\frac{N^3}{(N^3-N)+1} = 1.08000$$

$$\frac{N^3}{N^3-In_{dx}\cdot(N-1)} = 2.07692$$

$N^3 = 27.00000$

$N^3-In_{dx}\cdot(N-1) = 13.00000$

$N^2 = 9.00000$

A = 1.08000
B = 1.17391
C = 1.28571
D = 1.42105
E = 1.58824
F = 1.80000
G = 2.07692
H = 2.45455

I = 3.00000

$H_1 = 2.77778$
$F_1 = 2.55556$
$E_1 = 2.33333$
$D_1 = 2.11111$
$C_1 = 1.88889$
$B_1 = 1.66667$
$A_1 = 1.44444$
$Z = 1.22222$

$\frac{N}{A} = 2.77778$
$\frac{N}{B} = 2.55556$
$\frac{N}{C} = 2.33333$
$\frac{N}{D} = 2.11111$

$\frac{N}{E} = 1.88889$
$\frac{N}{F} = 1.66667$
$\frac{N}{G} = 1.44444$
$\frac{N}{H} = 1.22222$

Construction:

Index is Base 0

Index: $I_{ndx} = 0$

Number of div. by difference at an index.

$$\frac{(I_{ndx} \cdot N_2 - N_1 \cdot N_3) \cdot ((I_{ndx} \cdot N_2 + N_2) - N_1 \cdot N_3)}{N_1 \cdot N_2} = 45.76480$$

Total number of fractions.

$$\frac{N_1 \cdot (N_3 - 1)}{N_2} = 8.90253$$

Fraction at Index:

Num: $N_1 \cdot N_3 - I_{ndx} \cdot N_2 = 23.15853$

Den: $N_2 = 2.00000$

$$\frac{(N_1 \cdot N_3 - I_{ndx} \cdot N_2)}{N_2} = 11.57926$$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

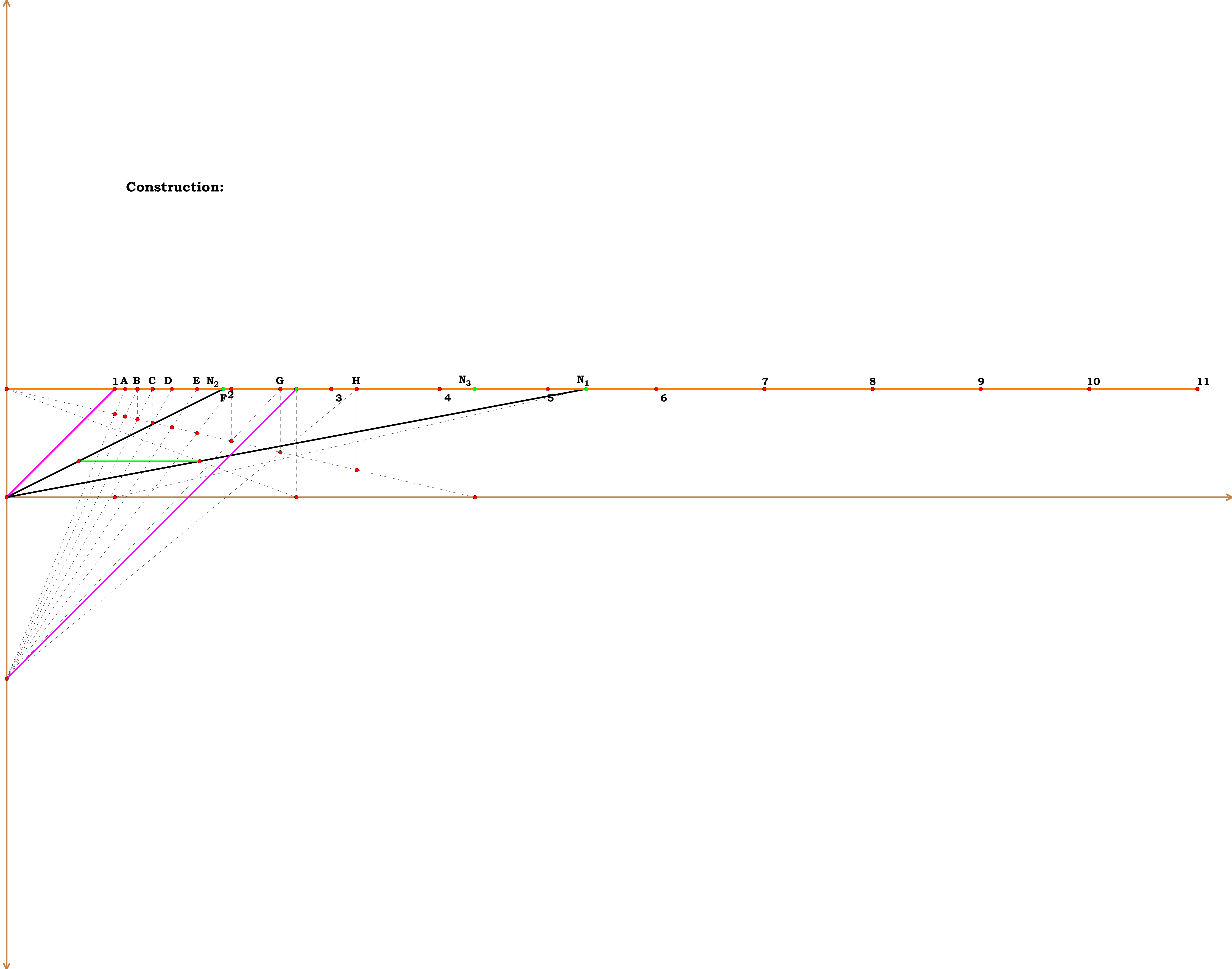
$N_1 = 5.35346$

$N_2 = 2.00000$

$N_3 = 4.32590$

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

Hide Intersection



Index is Base 0

Indexs: $I_{ndx} = 1$ $C_{indx} = 13.00000$

$$\frac{N_1 \cdot N_3 - N_1 - I_{ndx} \cdot N_2}{N_2} = 13.00000$$

Number of div. by difference at an index.

$$\frac{(I_{ndx} \cdot N_2 - N_1 \cdot N_3) \cdot ((I_{ndx} \cdot N_2 + N_2) - N_1 \cdot N_3)}{N_1 \cdot N_2} = 105.00000$$

Total number of fractions.

$$\frac{N_1 \cdot (N_3 - 1)}{N_2} = 14.00000 \qquad \frac{N_1 \cdot N_3 - N_1}{N_2} = 14.00000$$

Fraction at Index:

Num: $N_1 \cdot N_3 - I_{ndx} \cdot N_2 = 30.00000$

Den: $N_1 = 4.00000$

$$\frac{(N_1 \cdot N_3 - I_{ndx} \cdot N_2)}{N_1} = 7.50000$$

Fraction at Compliment:

$$\frac{N_1 + N_2 \cdot I_{ndx}}{N_1} = 1.50000$$

$$\frac{(N_1 \cdot N_3 - I_{ndx} \cdot N_2)}{N_1} + \frac{N_1 + N_2 \cdot I_{ndx}}{N_1} = 9.00000$$

$\frac{N_3}{1} = 8.00000$

$\frac{N_3}{A} = 7.50000$

$\frac{N_3}{B} = 7.00000$

$\frac{N_3}{C} = 6.50000$

$\frac{N_3}{D} = 6.00000$

$\frac{N_3}{E} = 5.50000$

$\frac{N_3}{F} = 5.00000$

$\frac{N_3}{G} = 4.50000$

$\frac{N_3}{H} = 4.00000$

$\frac{N_3}{I} = 3.50000$

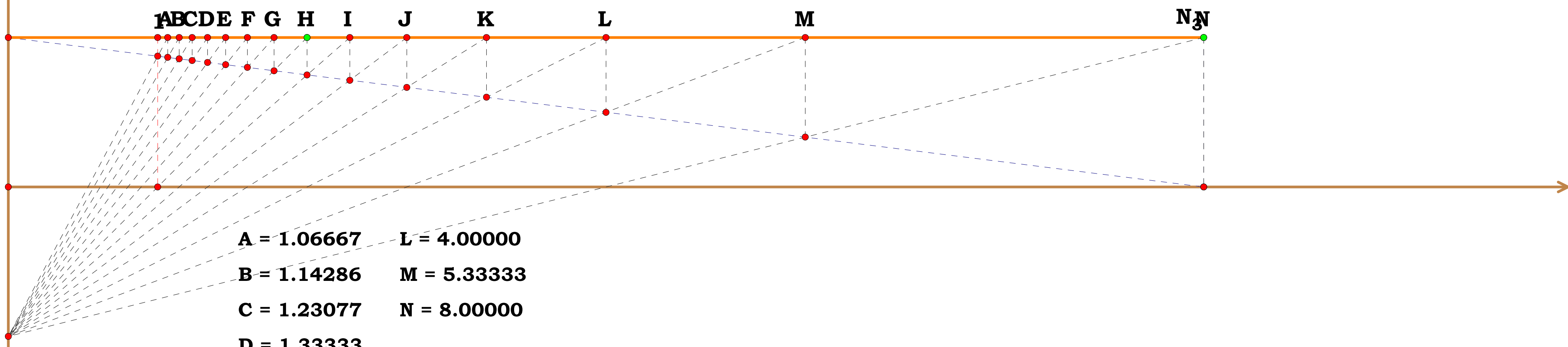
$\frac{N_3}{J} = 3.00000$

$\frac{N_3}{K} = 2.50000$

$\frac{N_3}{L} = 2.00000$

$\frac{N_3}{M} = 1.50000$

$\frac{N_3}{N} = 1.00000$



N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

$N_1 = 4.00000$

$N_2 = 2.00000$

$N_3 = 8.00000$

Present 2 Actions

$$\frac{N_3}{N_3 + 1} = 0.88889$$

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

A = 1.06667
B = 1.14286
C = 1.23077
D = 1.33333
E = 1.45455
F = 1.60000
G = 1.77778
H = 2.00000
I = 2.28571
J = 2.66667
K = 3.20000

L = 4.00000
M = 5.33333
N = 8.00000

Index is Base 0

$I_{ndx} = 0$

$N_b - \frac{I_{ndx}}{N_a} = 7.00000$

$\frac{(I_{ndx} - N_a \cdot N_b) \cdot ((I_{ndx} - N_a \cdot N_b) + 1)}{N_a} = 42.0000$

$N_a \cdot N_b - N_a = 6.00000$

Present 2 Actions

Present 2 Actions

$\frac{\text{numerator}}{\text{denominator}} = 1.00000$

numerator = 1.00000

denominator = 1.00000

$N_a = 1.00000$

$N_b = 7.00000$

num	den
N[1] -> 0	N[3] -> 0
N[1] -> 1	N[3] -> 1
N[1] -> 2	N[3] -> 2
N[1] -> 3	N[3] -> 3
N[1] -> 4	N[3] -> 4
N[1] -> 5	N[3] -> 5
N[1] -> 6	N[3] -> 6
N[1] -> 7	N[3] -> 7
N[1] -> 8	N[3] -> 8
N[1] -> 9	N[3] -> 9
N[1] -> 10	N[3] -> 10
N[1] -> 11	N[3] -> 11

Home Point

A Point

B Point

C Point

D Point

E Point

F Point

N[2] -> 0

N[2] -> 1

N[2] -> 2

N[2] -> 3

N[2] -> 4

N[2] -> 5

N[2] -> 6

N[2] -> 7

N[2] -> 8

N[2] -> 9

N[2] -> 10

N[2] -> 11

Show Intersection

$\frac{N_b}{1} = 7.00000$

$\frac{N_b}{A} = 6.00000$

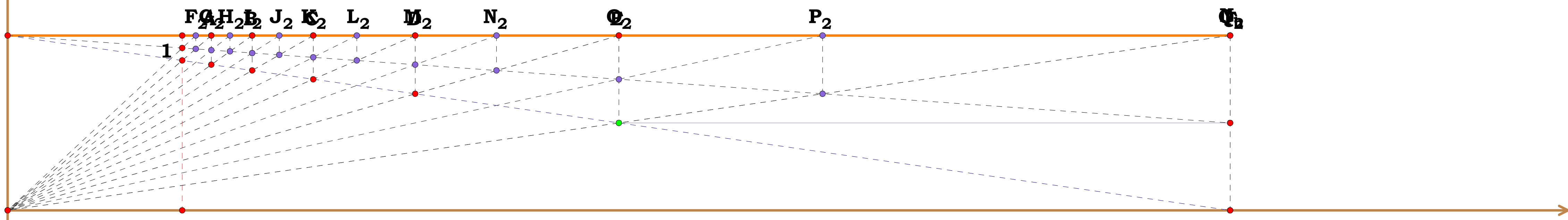
$\frac{N_b}{B} = 5.00000$

$\frac{N_b}{C} = 4.00000$

$\frac{N_b}{D} = 3.00000$

$\frac{N_b}{E} = 2.00000$

$\frac{N_b}{F} = 1.00000$



$\frac{N_b}{F_2} = 6.50000$

$\frac{N_b}{G_2} = 6.00000$

$\frac{N_b}{H_2} = 5.50000$

$\frac{N_b}{I_2} = 5.00000$

$\frac{N_b}{J_2} = 4.50000$

$\frac{N_b}{K_2} = 4.00000$

$\frac{N_b}{L_2} = 3.50000$

$\frac{N_b}{M_2} = 3.00000$

$\frac{N_b}{N_2} = 2.50000$

$\frac{N_b}{O_2} = 2.00000$

$\frac{N_b}{P_2} = 1.50000$

$\frac{N_b}{Q_2} = 1.00000$

$F_2 = 1.07692$

$G_2 = 1.16667$

$H_2 = 1.27273$

$I_2 = 1.40000$

$J_2 = 1.55556$

$K_2 = 1.75000$

$L_2 = 2.00000$

$M_2 = 2.33333$

$N_2 = 2.80000$

$O_2 = 3.50000$

$P_2 = 4.66667$

$Q_2 = 7.00000$

Recursive division using the first series points on the operational tail.

Index is Base 0

$I_{ndx} = 0$

$N_b - \frac{I_{ndx}}{N_a} = 7.00000$

$\frac{(I_{ndx}-N_a \cdot N_b)\cdot((I_{ndx}-N_a \cdot N_b)+1)}{N_a} = 42.0000$

$N_a \cdot N_b - N_a = 6.00000$

$\frac{N_b}{1} = 7.00000$

$\frac{N_b}{A} = 6.00000$

$\frac{N_b}{B} = 5.00000$

$\frac{N_b}{C} = 4.00000$

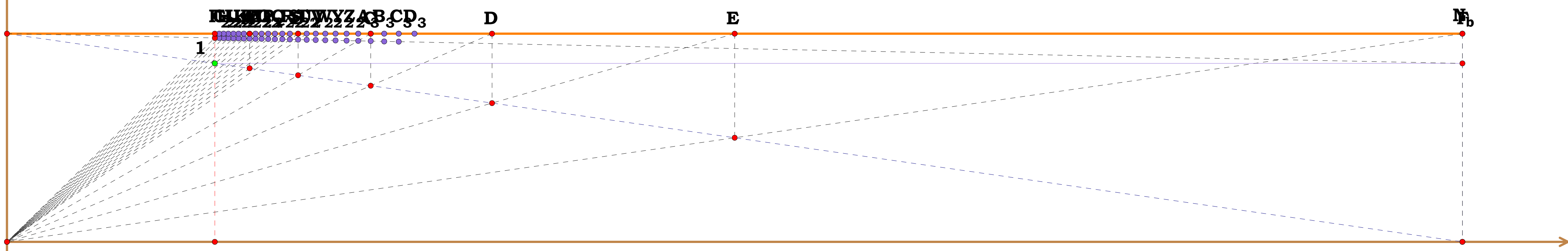
$\frac{N_b}{D} = 3.00000$

$\frac{N_b}{E} = 2.00000$

$\frac{N_b}{F} = 1.00000$

Present 2 Actions

Present 2 Actions



$\frac{\text{numerator}}{\text{denominator}} = 1.00000$

numerator = 1.00000

denominator = 1.00000

$\frac{N_b}{N_b+1} = 0.87500$

$N_a = 1.00000$

$N_b = 7.00000$

num **den**

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

Home Point
A Point
B Point
C Point
D Point
E Point
F Point

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

Show Intersection

$\frac{N_b}{F_2} = 6.85714$

$\frac{N_b}{G_2} = 6.71429$

$\frac{N_b}{H_2} = 6.57143$

$\frac{N_b}{I_2} = 6.42857$

$\frac{N_b}{J_2} = 6.28571$

$\frac{N_b}{K_2} = 6.14286$

$\frac{N_b}{L_2} = 6.00000$

$\frac{N_b}{M_2} = 5.85714$

$\frac{N_b}{N_2} = 5.71429$

$\frac{N_b}{O_2} = 5.57143$

$\frac{N_b}{P_2} = 5.42857$

$\frac{N_b}{Q_2} = 5.28571$

$\frac{N_b}{R_2} = 5.14286$

$\frac{N_b}{S_2} = 5.00000$

$\frac{N_b}{T_2} = 4.85714$

$\frac{N_b}{U_2} = 4.71429$

$\frac{N_b}{V_2} = 4.57143$

$\frac{N_b}{W_2} = 4.42857$

$\frac{N_b}{Y_2} = 4.28571$

$\frac{N_b}{Z_2} = 4.14286$

$\frac{N_b}{A_3} = 4.00000$

$\frac{N_b}{B_3} = 3.85714$

$\frac{N_b}{C_3} = 3.71429$

$\frac{N_b}{D_3} = 3.57143$

$F_2 = 1.02083$

$G_2 = 1.04255$

$H_2 = 1.06522$

$I_2 = 1.08889$

$J_2 = 1.11364$

$K_2 = 1.13953$

$L_2 = 1.16667$

$M_2 = 1.19512$

$N_2 = 1.22500$

$O_2 = 1.25641$

$P_2 = 1.28947$

$Q_2 = 1.32432$

$R_2 = 1.36111$

$S_2 = 1.40000$

$T_2 = 1.44118$

$U_2 = 1.48485$

$V_2 = 1.53125$

$W_2 = 1.58065$

$Y_2 = 1.63333$

$Z_2 = 1.68966$

$A_3 = 1.75000$

$B_3 = 1.81481$

$C_3 = 1.88462$

$D_3 = 1.96000$

Recursive division using the first series points on the operational tail.

Index = 5

# of fracs.

$N_1 \cdot N_2 = 8.00000$

len of frac.

$$\frac{N_1 \cdot N_2 \cdot N_3}{N_1 \cdot N_2 \cdot N_3 - Index \cdot (N_3 - 1)} = 2.20690$$

num of div. for frac.

$$\frac{(Index \cdot (1 - N_3) + N_1 \cdot N_2 \cdot N_3) \cdot ((N_3 + Index \cdot (1 - N_3) + N_1 \cdot N_2 \cdot N_3) - 1)}{N_1 \cdot N_2 \cdot (N_3 - 1)} = 18.64286$$

$$\frac{N_3}{1} = 8.00000 \qquad \frac{N_3}{E} = 3.62500$$

$$\frac{N_3}{A} = 7.12500 \qquad \frac{N_3}{F} = 2.75000$$

$$\frac{N_3}{B} = 6.25000 \qquad \frac{N_3}{G} = 1.87500$$

$$\frac{N_3}{C} = 5.37500 \qquad \frac{N_3}{H} = 1.00000$$

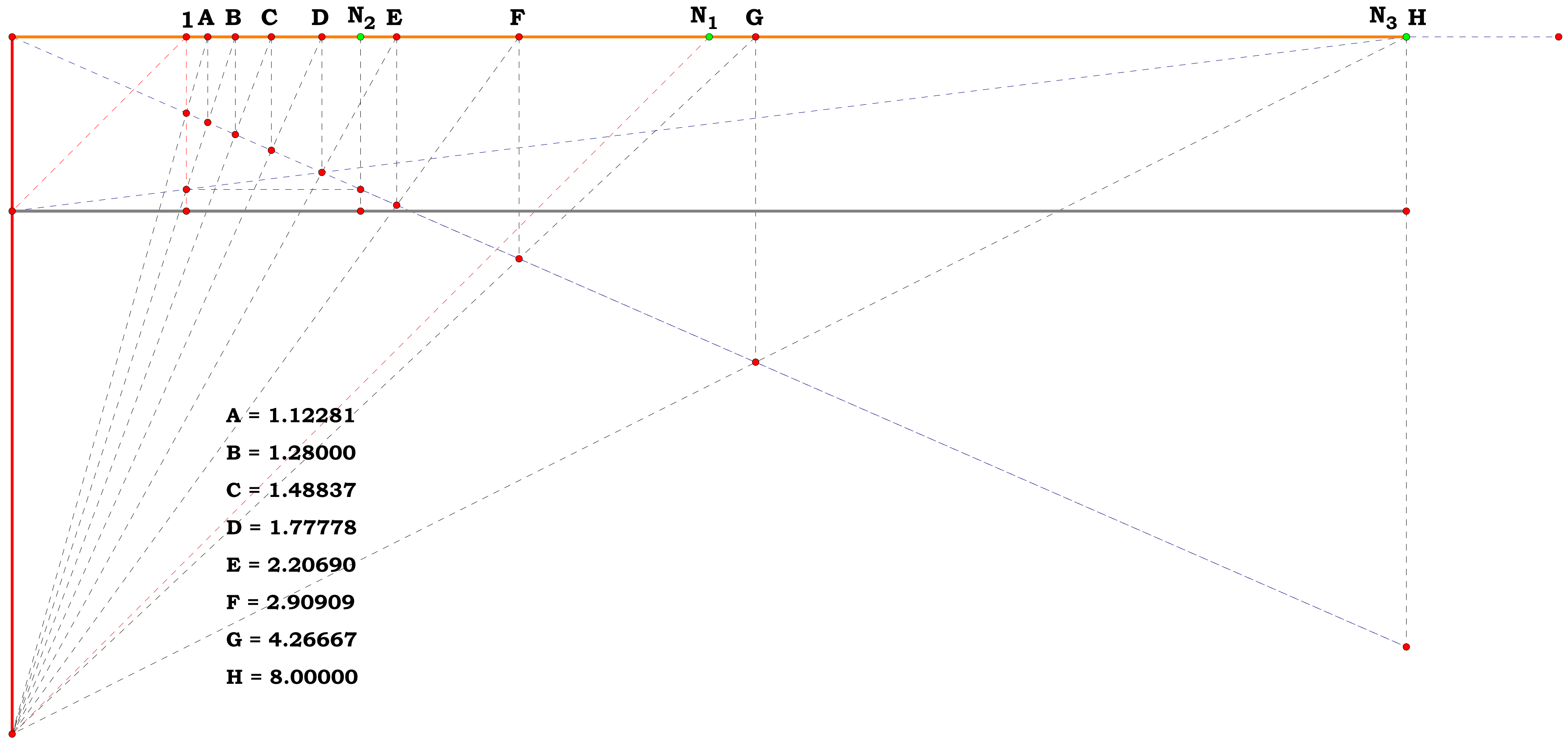
$$\frac{N_3}{D} = 4.50000$$

Fraction at Index:

Num: $N_1 \cdot N_2 \cdot N_3 - Index \cdot (N_3 - 1) = 29.00000$

Den: $N_1 \cdot N_2 = 8.00000$

$$\frac{(N_1 \cdot N_2 \cdot N_3 - Index \cdot (N_3 - 1))}{(N_1 \cdot N_2)} = 3.62500$$



A = 1.12281
B = 1.28000
C = 1.48837
D = 1.77778
E = 2.20690
F = 2.90909
G = 4.26667
H = 8.00000

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

$N_1 = 4.00000$
$N_2 = 2.00000$
$N_3 = 8.00000$

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

$i_{dx} = 1$

$$\frac{(i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3)\cdot(((N_2-i_{dx}\cdot N_2-N_0\cdot N_2)+i_{dx}\cdot N_0\cdot N_2)-N_0\cdot N_1\cdot N_3)}{N_1\cdot N_3\cdot(((N_2+i_{dx}\cdot(N_2-N_0\cdot N_2))-i_{dx}\cdot N_2-N_0\cdot N_2)+i_{dx}\cdot N_0\cdot N_2)} = 60.00000$$

$$\frac{N_0\cdot N_1\cdot N_3}{i_{dx}\cdot(N_2-N_2\cdot N_0)+N_0\cdot N_1\cdot N_3} = 1.06667$$

$$\frac{N_1\cdot N_3-i_{dx}\cdot N_2\cdot(1-N_0)}{N_1\cdot N_3} = 1.25000$$

$$\frac{(i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3)}{(N_1\cdot N_3)}+\frac{N_1\cdot N_3-i_{dx}\cdot N_2\cdot(1-N_0)}{N_1\cdot N_3} = 5.00000$$

Total number of fractions.

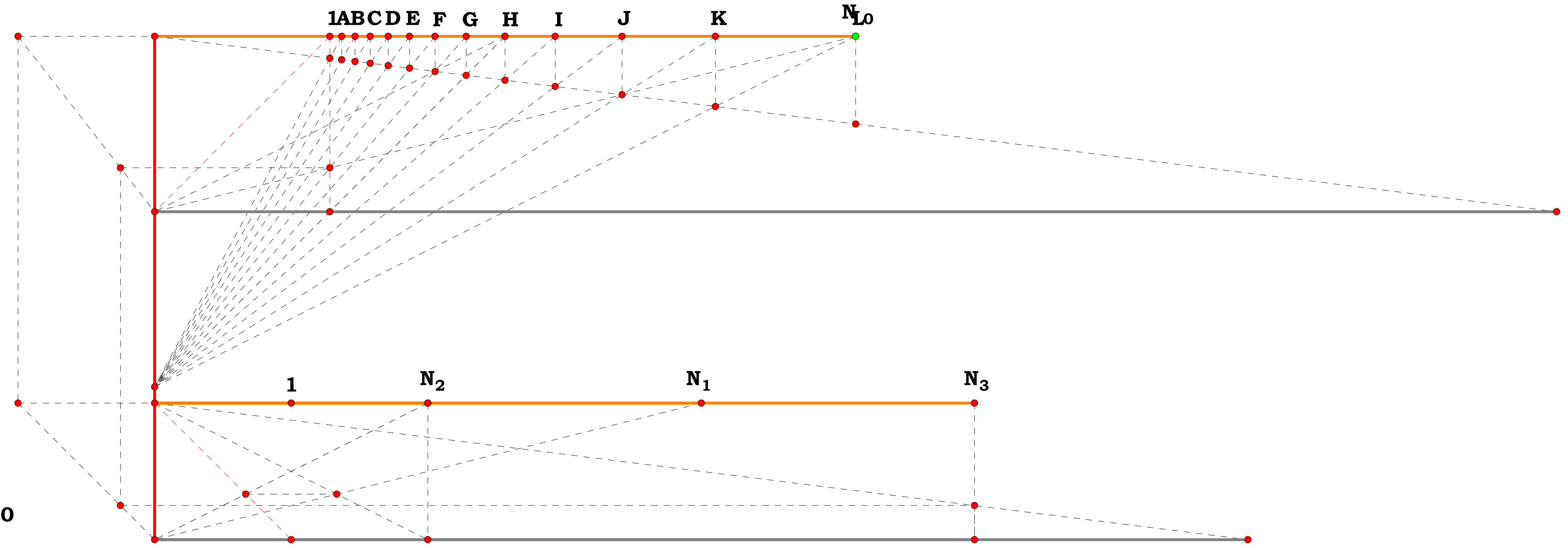
$$\frac{N_1\cdot N_3}{N_2} = 12.00000$$

Fraction at Index:

Num: $i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3 = 90.00000$

Den: $N_1\cdot N_3 = 24.00000$

$$\frac{(i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3)}{(N_1\cdot N_3)} = 3.75000$$



$N_0 = 4.00000$

$N_1 = 4.00000$

$N_2 = 2.00000$

$N_3 = 6.00000$

$N_1\cdot N_3 = 24.00000$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

N [0] -> 0
N [0] -> 1
N [0] -> 2
N [0] -> 3
N [0] -> 4
N [0] -> 5
N [0] -> 6
N [0] -> 7
N [0] -> 8
N [0] -> 9
N [0]-> 10
N [0] -> 11

A = 1.06667
B = 1.14286
C = 1.23077
D = 1.33333
E = 1.45455
F = 1.60000
G = 1.77778
H = 2.00000
I = 2.28571
J = 2.66667
K = 3.20000
L = 4.00000

$\frac{N_0}{A} = 3.75000$

$\frac{N_0}{B} = 3.50000$

$\frac{N_0}{C} = 3.25000$

$\frac{N_0}{D} = 3.00000$

$\frac{N_0}{E} = 2.75000$

$\frac{N_0}{F} = 2.50000$

$\frac{N_0}{G} = 2.25000$

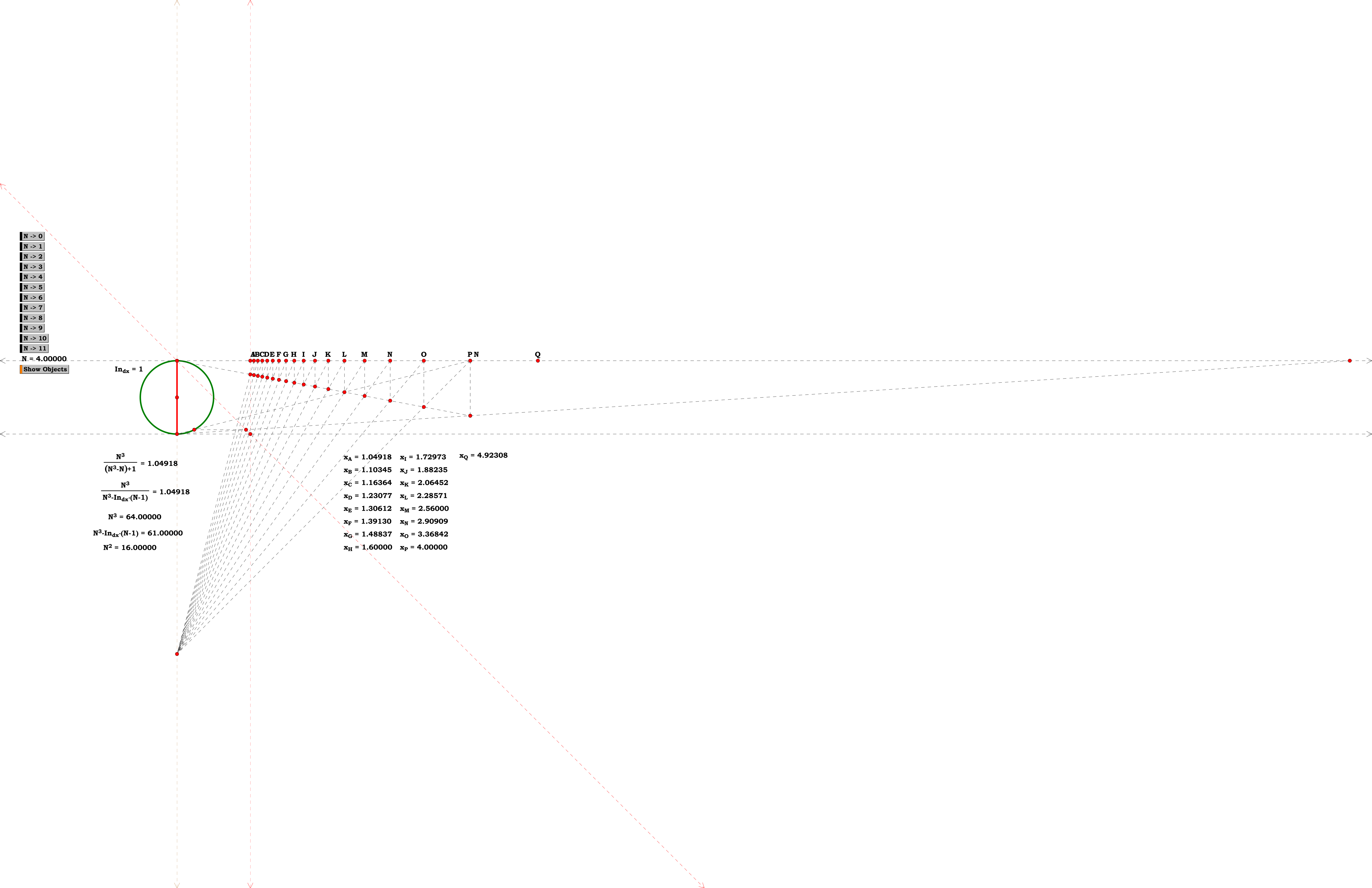
$\frac{N_0}{H} = 2.00000$

$\frac{N_0}{I} = 1.75000$

$\frac{N_0}{J} = 1.50000$

$\frac{N_0}{K} = 1.25000$

$\frac{N_0}{L} = 1.00000$



N = 4.00000

In_{dx} = 1

$\frac{N^3}{(N^3-N)+1} = 1.04918$

$\frac{N^3}{N^3-In_{dx}\cdot(N-1)} = 1.04918$

$N^3 = 64.00000$

$N^3-In_{dx}\cdot(N-1) = 61.00000$

$N^2 = 16.00000$

$x_A = 1.04918$
$x_B = 1.10345$
$x_C = 1.16364$
$x_D = 1.23077$
$x_E = 1.30612$
$x_F = 1.39130$
$x_G = 1.48837$
$x_H = 1.60000$
$x_I = 1.72973$
$x_J = 1.88235$
$x_K = 2.06452$
$x_L = 2.28571$
$x_M = 2.56000$
$x_N = 2.90909$
$x_O = 3.36842$
$x_P = 4.00000$
$x_Q = 4.92308$

Circle Points Circle Points Circle Points
Show Lines Hide Objects Show Lines Hide Objects Show Lines Hide Objects

0 0 0 0 0 0
1 1 1 1 1 1
2 2 2 2 2 2
3 3 3 3 3 3
4 4 4 4 4 4
5 5 5 5 5 5
6 6 6 6 6 6
7 7 7 7 7 7
8 8 8 8 8 8
9 9 9 9 9 9
10 10 10 10 10 10
11 11 11 11 11 11
12 12 12 12 12 12
13 13 13 13 13 13
14 14 14 14 14 14
15 15 15 15 15 15

$In_{dx} = 0$

$\frac{26.25000}{26.25000} = 1.00000$

$B_3 = 6.17647$

$\frac{N_1}{B_3 - N_1} + 1 = 5.25000$

$\frac{7}{3.75} = 1.86667$

A = 1.03960
B = 1.08247
C = 1.12903
D = 1.17978
E = 1.23529
F = 1.29630
G = 1.36364
H = 1.43836
I = 1.52174
J = 1.61538
K = 1.72131
L = 1.84211
M = 1.98113
N = 2.14286
O = 2.33333
P = 2.56098
Q = 2.83784
R = 3.18182
S = 3.62069
T = 4.20000
U = 5.00000

$N_1 = 5.00000$

$N_2 = 0.00000$

$n_a = 7.00000$

$n_b = 5.00000$

$r_{da} = 1.40000$

$\frac{n_a}{n_b} = 1.40000$

$N_1 \cdot \frac{n_a}{n_b} = 7.00000$

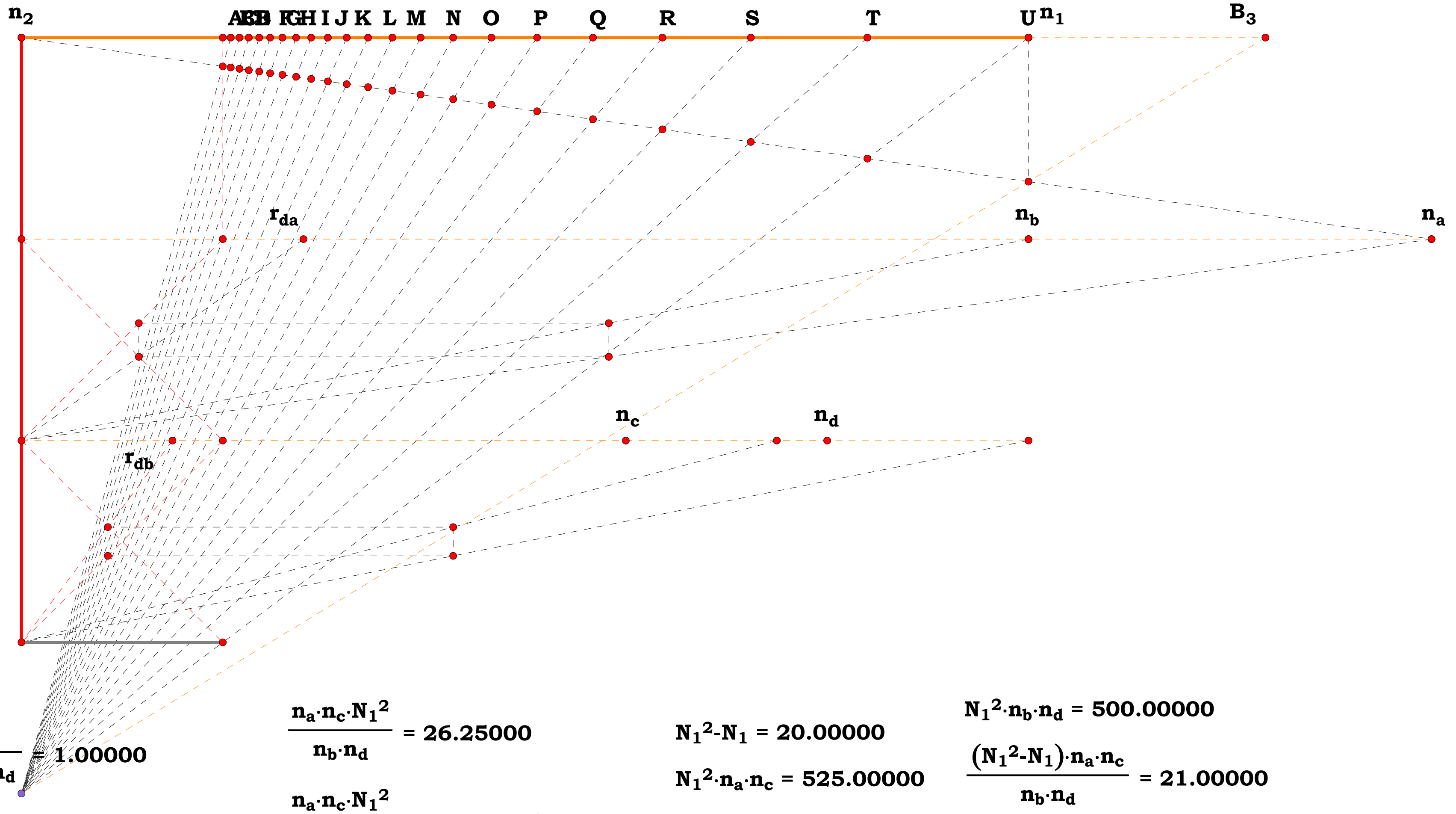
$n_c = 3.00000$

$n_d = 4.00000$

$r_{db} = 0.75000$

$\frac{n_c}{n_d} = 0.75000$

$\frac{n_c}{n_d} \cdot N_1 = 3.75000$



$\frac{N_1^2 \cdot n_a \cdot n_c}{N_1^2 \cdot n_a \cdot n_c - In_{dx} \cdot n_b \cdot n_d} = 1.00000$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} = 26.25000$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} - In_{dx} = 26.25000$

$N_1^2 - N_1 = 20.00000$

$N_1^2 \cdot n_a \cdot n_c = 525.00000$

$N_1^2 \cdot n_b \cdot n_d = 500.00000$

$\frac{(N_1^2 - N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d} = 21.00000$

Circle Points Circle Points Circle Points

Show Lines Hide Objects Show Lines Hide Objects Show Lines Hide Objects

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15

$\text{In}_{dx} = 0$

26.25000
26.25000 = 1.00000

$B_3 = 6.17647$

$$\frac{N_1}{B_3-N_1}+1 = 5.25000$$

$$\frac{7}{3.75} = 1.86667$$

A = 1.03960
B = 1.08247
C = 1.12903
D = 1.17978
E = 1.23529
F = 1.29630
G = 1.36364
H = 1.43836
I = 1.52174

J = 1.61538
K = 1.72131
L = 1.84211
M = 1.98113
N = 2.14286
O = 2.33333
P = 2.56098
Q = 2.83784
R = 3.18182

S = 3.62069
T = 4.20000
U = 5.00000

26.25+5.25 = 31.50000

25.25+6.25 = 31.50000

24.25+7.25 = 31.50000

$$\frac{26.25}{(26.25+5.25)} = 0.83333$$

$$\frac{26.25}{(25.25+6.25)} = 0.83333$$

$$\frac{26.25}{(24.25+7.25)} = 0.83333$$

$N_1 = 5.00000$

$N_2 = 0.00000$

$n_a = 7.00000$

$n_b = 5.00000$

$r_{da} = 1.40000$

$$\frac{n_a}{n_b} = 1.40000$$

$$N_1 \cdot \frac{n_a}{n_b} = 7.00000$$

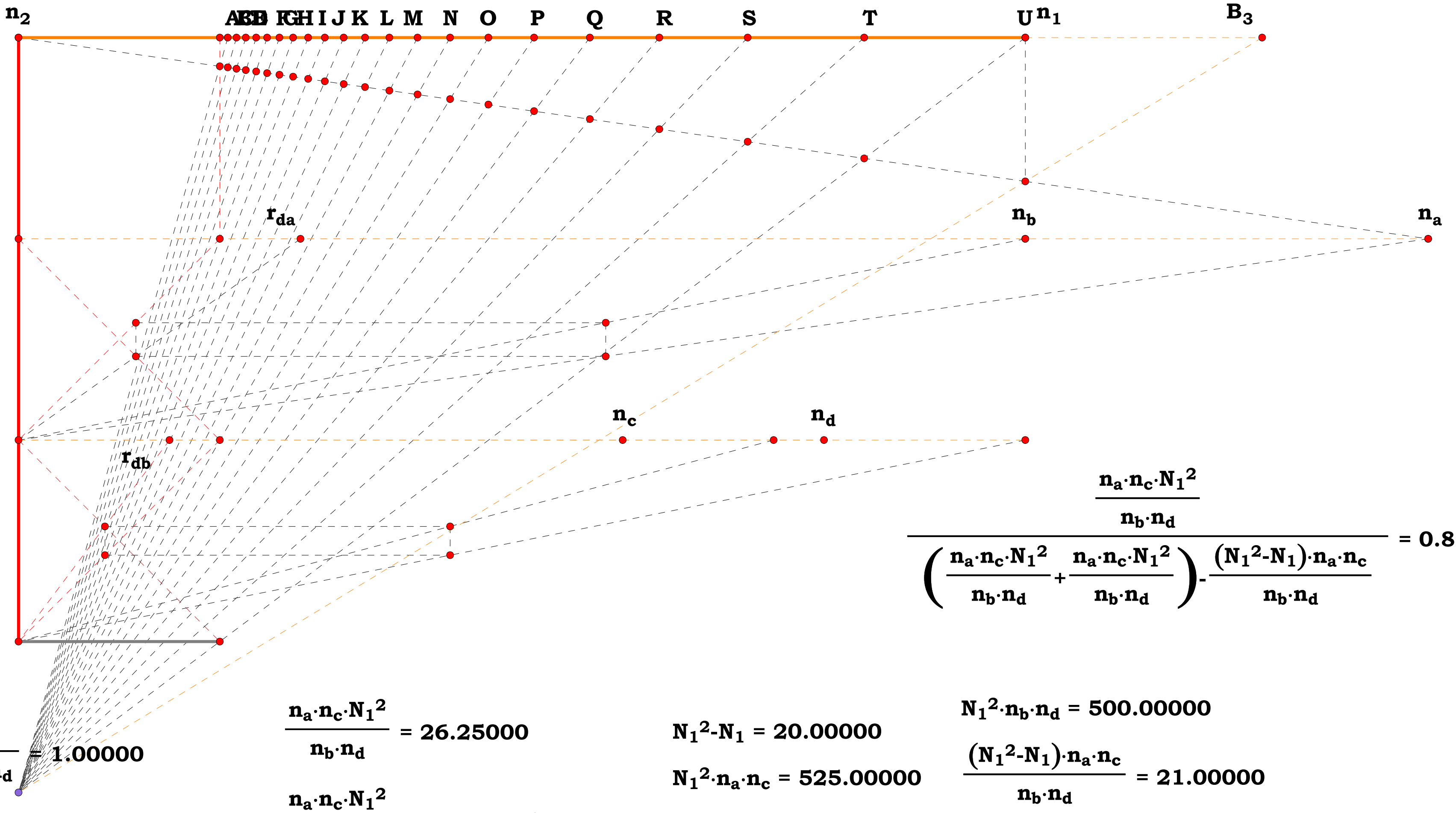
$n_c = 3.00000$

$n_d = 4.00000$

$r_{db} = 0.75000$

$$\frac{n_c}{n_d} = 0.75000$$

$$\frac{n_c}{n_d} \cdot N_1 = 3.75000$$



$$\frac{N_1^2 \cdot n_a \cdot n_c}{N_1^2 \cdot n_a \cdot n_c - \text{In}_{dx} \cdot n_b \cdot n_d} = 1.00000$$

$$\frac{\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d}}{\left(\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d}+\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d}\right)-\frac{(N_1^2-N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d}} = 0.83333$$

$$\frac{N_1}{N_1+1} = 0.83333$$

$$\frac{m_3}{m_3-1} = 1.03960$$

$$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} = 26.25000$$

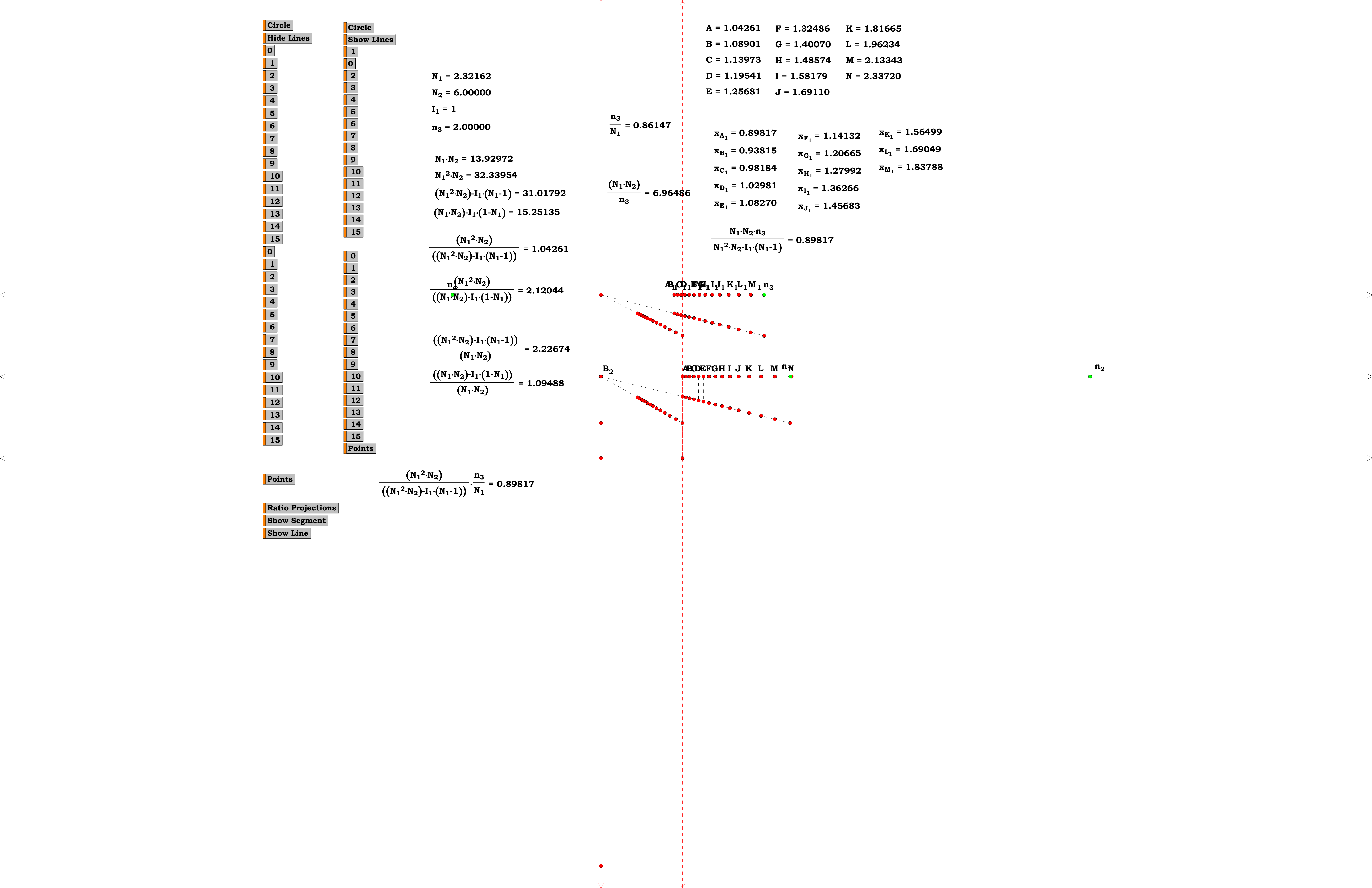
$$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} - \text{In}_{dx} = 26.25000$$

$N_1^2 - N_1 = 20.00000$

$N_1^2 \cdot n_a \cdot n_c = 525.00000$

$N_1^2 \cdot n_b \cdot n_d = 500.00000$

$$\frac{(N_1^2-N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d} = 21.00000$$



$N_1 = 2.32162$

$N_2 = 6.00000$

$I_1 = 1$

$n_3 = 2.00000$

$N_1 \cdot N_2 = 13.92972$

$N_1{}^2 \cdot N_2 = 32.33954$

$(N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1) = 31.01792$

$(N_1 \cdot N_2) - I_1 \cdot (1 - N_1) = 15.25135$

$$\frac{(N_1{}^2 \cdot N_2)}{((N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1))} = 1.04261$$

$$\frac{(N_1{}^2 \cdot N_2)}{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))} = 2.12044$$

$$\frac{((N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1))}{(N_1 \cdot N_2)} = 2.22674$$

$$\frac{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))}{(N_1 \cdot N_2)} = 1.09488$$

$$\frac{(N_1{}^2 \cdot N_2)}{((N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1))} \cdot \frac{n_3}{N_1} = 0.89817$$

$$\frac{n_3}{N_1} = 0.86147$$

$$\frac{(N_1 \cdot N_2)}{n_3} = 6.96486$$

A = 1.04261 F = 1.32486 K = 1.81665
B = 1.08901 G = 1.40070 L = 1.96234
C = 1.13973 H = 1.48574 M = 2.13343
D = 1.19541 I = 1.58179 N = 2.33720
E = 1.25681 J = 1.69110

$x_{A_1} = 0.89817$ $x_{F_1} = 1.14132$ $x_{K_1} = 1.56499$
$x_{B_1} = 0.93815$ $x_{G_1} = 1.20665$ $x_{L_1} = 1.69049$
$x_{C_1} = 0.98184$ $x_{H_1} = 1.27992$ $x_{M_1} = 1.83788$
$x_{D_1} = 1.02981$ $x_{I_1} = 1.36266$
$x_{E_1} = 1.08270$ $x_{J_1} = 1.45683$

$$\frac{N_1 \cdot N_2 \cdot n_3}{N_1{}^2 \cdot N_2 - I_1 \cdot (N_1 - 1)} = 0.89817$$

Circle
Hide Lines
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

Circle
Show Lines
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Points

$N_1 = 13.00000$

$N_2 = 1.00000$

$I_1 = 1$

$n_3 = 5.00000$

$N_1 \cdot N_2 = 13.00000$

$N_1{}^2 \cdot N_2 = 169.00000$

$(N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1) = 157.00000$

$(N_1 \cdot N_2) - I_1 \cdot (1 - N_1) = 25.00000$

$$\frac{(N_1{}^2 \cdot N_2)}{((N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1))} = 1.07643$$

$$\frac{(N_1{}^2 \cdot N_2)}{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))} = 6.76000$$

$$\frac{((N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1))}{(N_1 \cdot N_2)} = 12.07692$$

$$\frac{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))}{(N_1 \cdot N_2)} = 1.92308$$

$$(N_1 \cdot N_2) \cdot \frac{n_3}{N_1} = 5.00000$$

$$\frac{n_3}{N_1} = 0.38462$$

$x_{E_2} = 0.38462$

$$\frac{n_3}{N_1} \cdot (N_1 \cdot N_2) = 5.00000$$

$n_3 \cdot N_2 = 5.00000$

$A = 1.07643$
$B = 1.16552$
$C = 1.27068$
$D = 1.39669$
$E = 1.55046$

$F = 1.74227$
$G = 1.98824$
$H = 2.31507$
$I = 2.77049$
$J = 3.44898$

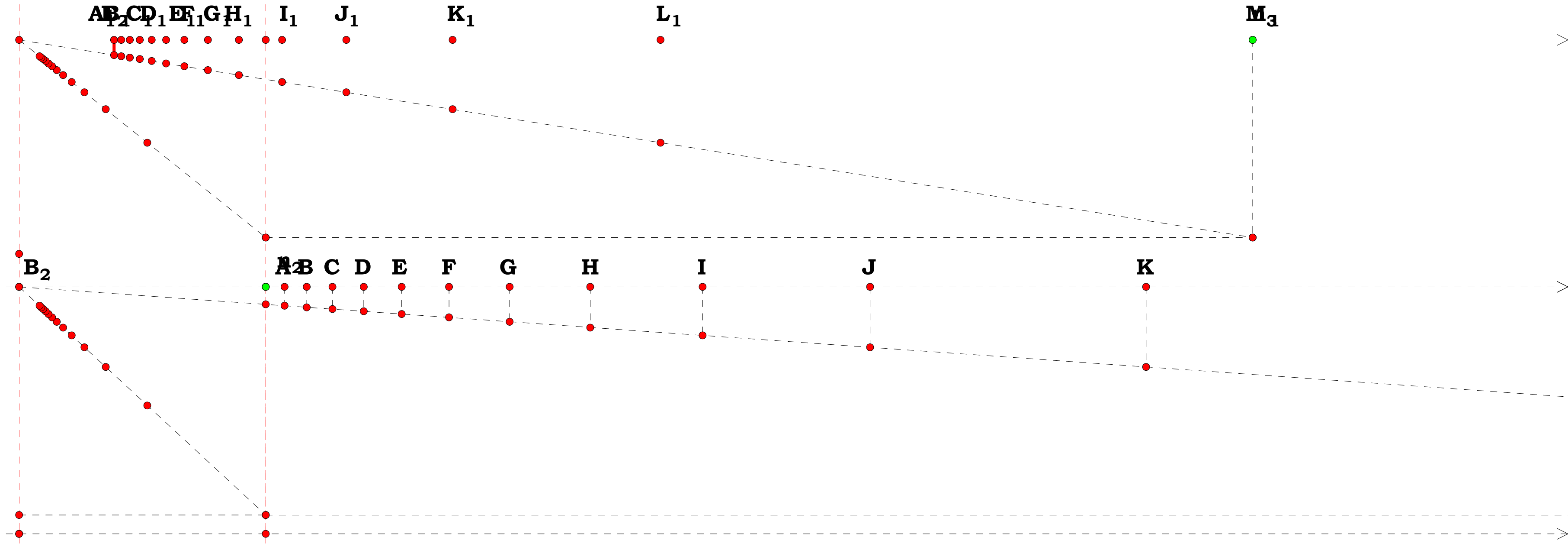
$K = 4.56757$
$L = 6.76000$
$M = 13.00000$
$N = 169.00000$

$x_{A_1} = 0.41401$
$x_{B_1} = 0.44828$
$x_{C_1} = 0.48872$
$x_{D_1} = 0.53719$
$x_{E_1} = 0.59633$

$x_{F_1} = 0.67010$
$x_{G_1} = 0.76471$
$x_{H_1} = 0.89041$
$x_{I_1} = 1.06557$
$x_{J_1} = 1.32653$

$x_{K_1} = 1.75676$
$x_{L_1} = 2.60000$
$x_{M_1} = 5.00000$

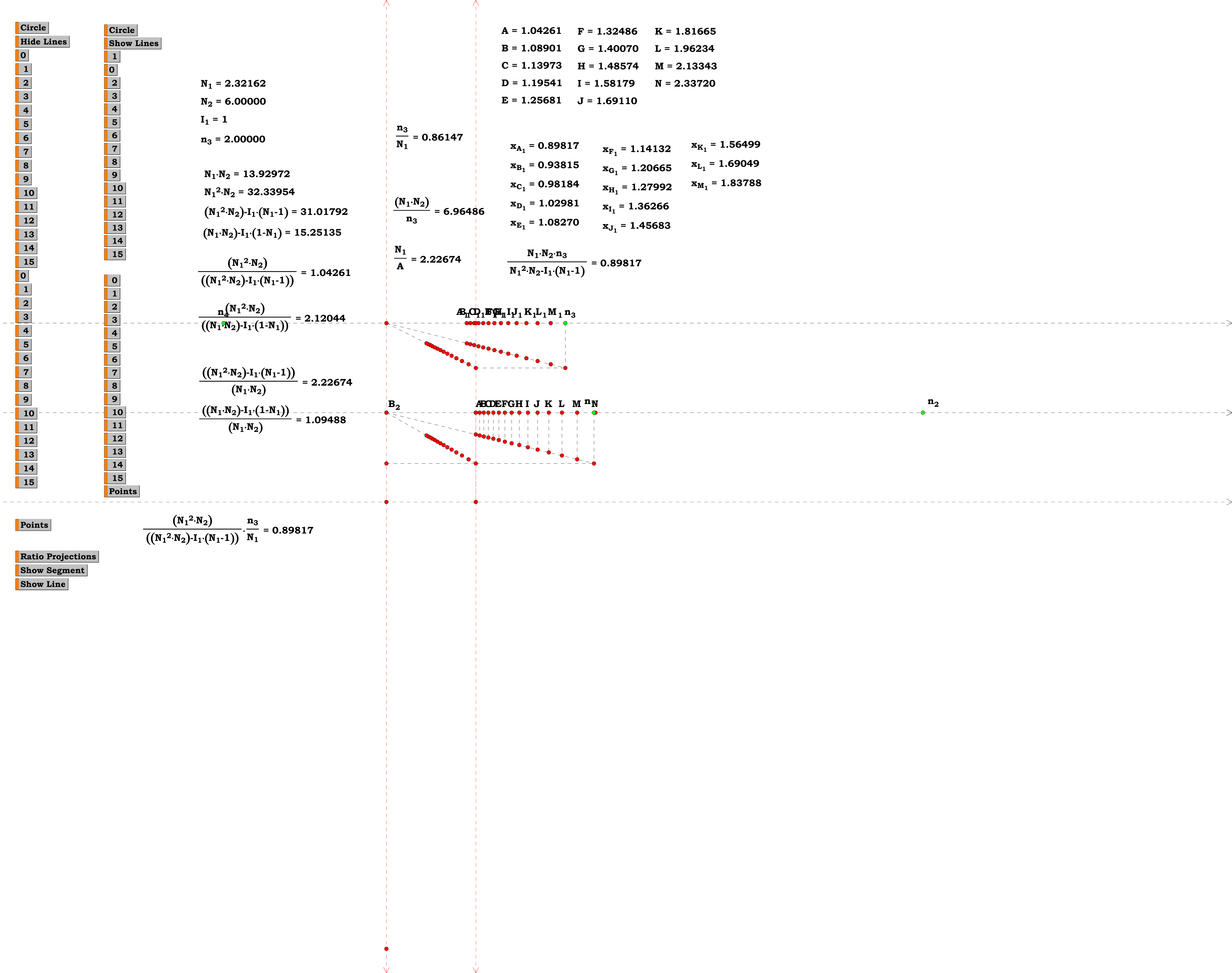
$$\frac{N_1 \cdot N_2 \cdot n_3}{N_1{}^2 \cdot N_2 - I_1 \cdot (N_1 - 1)} = 0.41401$$



Points

$$\frac{(N_1{}^2 \cdot N_2)}{((N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1))} \cdot \frac{n_3}{N_1} = 0.41401$$

Ratio Projections
Show Segment
Show Line



$N_1 = 2.32162$

$N_2 = 6.00000$

$I_1 = 1$

$n_3 = 2.00000$

$N_1 \cdot N_2 = 13.92972$

$N_1^2 \cdot N_2 = 32.33954$

$(N_1^2 \cdot N_2) - I_1 \cdot (N_1 - 1) = 31.01792$

$(N_1 \cdot N_2) - I_1 \cdot (1 - N_1) = 15.25135$

$$\frac{(N_1^2 \cdot N_2)}{((N_1^2 \cdot N_2) - I_1 \cdot (N_1 - 1))} = 1.04261$$

$$\frac{(N_1^2 \cdot N_2)}{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))} = 2.12044$$

$$\frac{((N_1^2 \cdot N_2) - I_1 \cdot (N_1 - 1))}{(N_1 \cdot N_2)} = 2.22674$$

$$\frac{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))}{(N_1 \cdot N_2)} = 1.09488$$

$$\frac{(N_1^2 \cdot N_2)}{((N_1^2 \cdot N_2) - I_1 \cdot (N_1 - 1))} \cdot \frac{n_3}{N_1} = 0.89817$$

$$\frac{n_3}{N_1} = 0.86147$$

$$\frac{(N_1 \cdot N_2)}{n_3} = 6.96486$$

$$\frac{N_1}{A} = 2.22674$$

$$\frac{N_1 \cdot N_2 \cdot n_3}{N_1^2 \cdot N_2 - I_1 \cdot (N_1 - 1)} = 0.89817$$

$A = 1.04261$ $F = 1.32486$ $K = 1.81665$

$B = 1.08901$ $G = 1.40070$ $L = 1.96234$

$C = 1.13973$ $H = 1.48574$ $M = 2.13343$

$D = 1.19541$ $I = 1.58179$ $N = 2.33720$

$E = 1.25681$ $J = 1.69110$

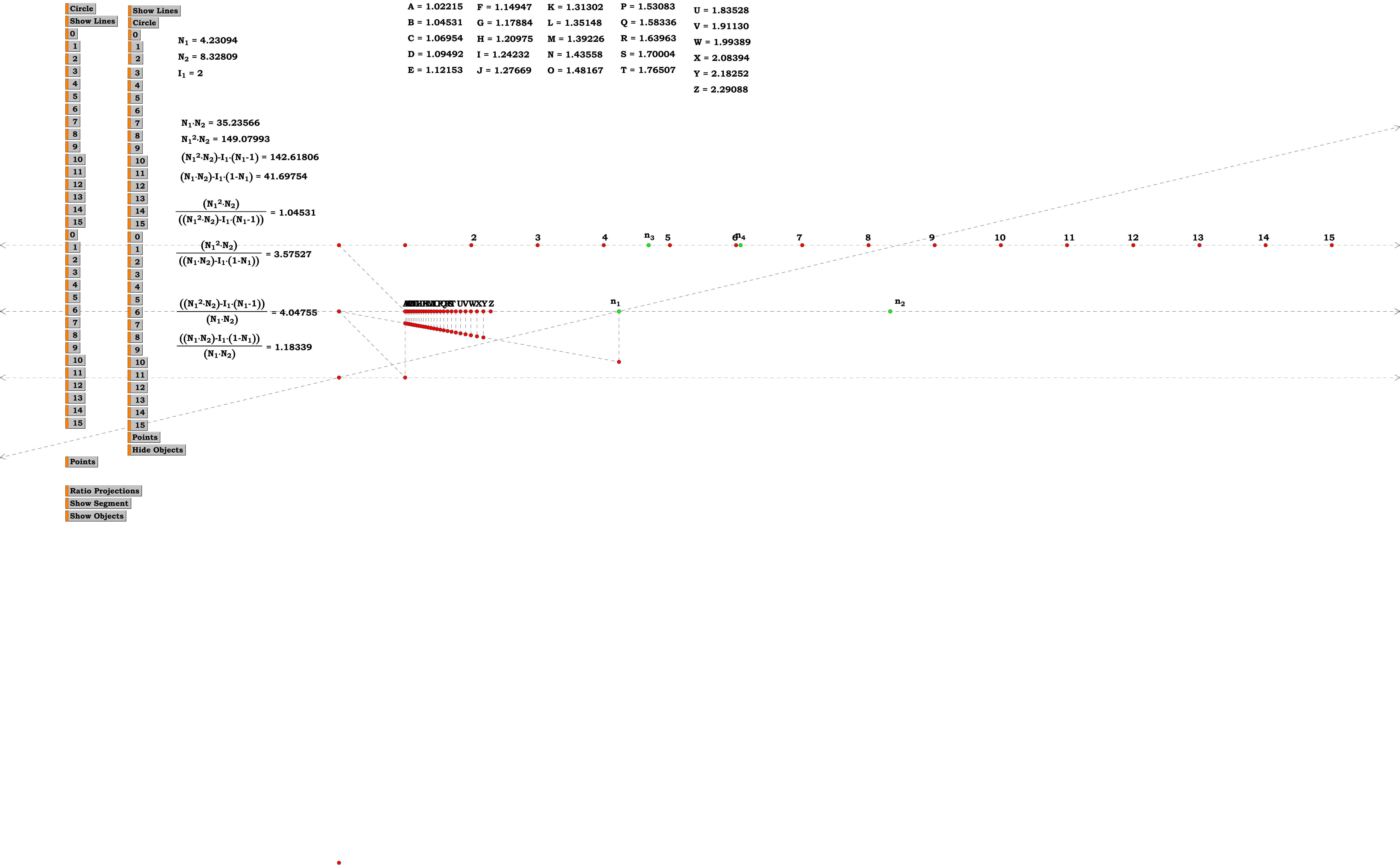
$x_{A_1} = 0.89817$ $x_{F_1} = 1.14132$ $x_{K_1} = 1.56499$

$x_{B_1} = 0.93815$ $x_{G_1} = 1.20665$ $x_{L_1} = 1.69049$

$x_{C_1} = 0.98184$ $x_{H_1} = 1.27992$ $x_{M_1} = 1.83788$

$x_{D_1} = 1.02981$ $x_{I_1} = 1.36266$

$x_{E_1} = 1.08270$ $x_{J_1} = 1.45683$



$N_1 = 4.23094$

$N_2 = 8.32809$

$I_1 = 2$

$N_1 \cdot N_2 = 35.23566$

$N_1{}^2 \cdot N_2 = 149.07993$

$(N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1) = 142.61806$

$(N_1 \cdot N_2) - I_1 \cdot (1 - N_1) = 41.69754$

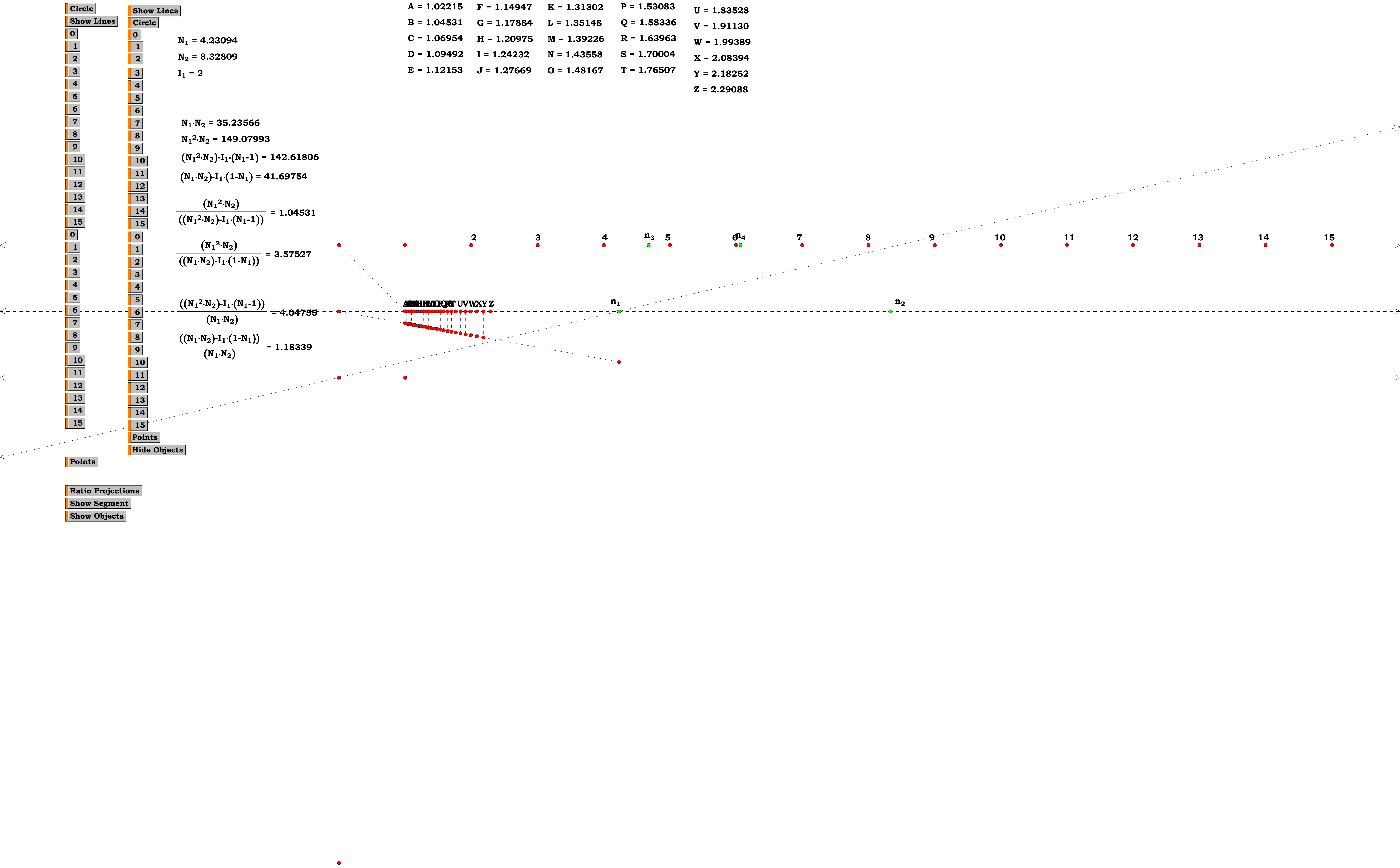
$$\frac{(N_1{}^2 \cdot N_2)}{((N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1))} = 1.04531$$

$$\frac{(N_1{}^2 \cdot N_2)}{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))} = 3.57527$$

$$\frac{((N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1))}{(N_1 \cdot N_2)} = 4.04755$$

$$\frac{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))}{(N_1 \cdot N_2)} = 1.18339$$

A = 1.02215
B = 1.04531
C = 1.06954
D = 1.09492
E = 1.12153
F = 1.14947
G = 1.17884
H = 1.20975
I = 1.24232
J = 1.27669
K = 1.31302
L = 1.35148
M = 1.39226
N = 1.43558
O = 1.48167
P = 1.53083
Q = 1.58336
R = 1.63963
S = 1.70004
T = 1.76507
U = 1.83528
V = 1.91130
W = 1.99389
X = 2.08394
Y = 2.18252
Z = 2.29088



$N_1 = 4.23094$

$N_2 = 8.32809$

$I_1 = 2$

$N_1 \cdot N_2 = 35.23566$

$N_1^2 \cdot N_2 = 149.07993$

$(N_1^2 \cdot N_2) - I_1 \cdot (N_1 - 1) = 142.61806$

$(N_1 \cdot N_2) - I_1 \cdot (1 - N_1) = 41.69754$

$$\frac{(N_1^2 \cdot N_2)}{((N_1^2 \cdot N_2) - I_1 \cdot (N_1 - 1))} = 1.04531$$

$$\frac{(N_1^2 \cdot N_2)}{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))} = 3.57527$$

$$\frac{((N_1^2 \cdot N_2) - I_1 \cdot (N_1 - 1))}{(N_1 \cdot N_2)} = 4.04755$$

$$\frac{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))}{(N_1 \cdot N_2)} = 1.18339$$

A = 1.02215
B = 1.04531
C = 1.06954
D = 1.09492
E = 1.12153

F = 1.14947
G = 1.17884
H = 1.20975
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K = 1.31302
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P = 1.53083
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S = 1.70004
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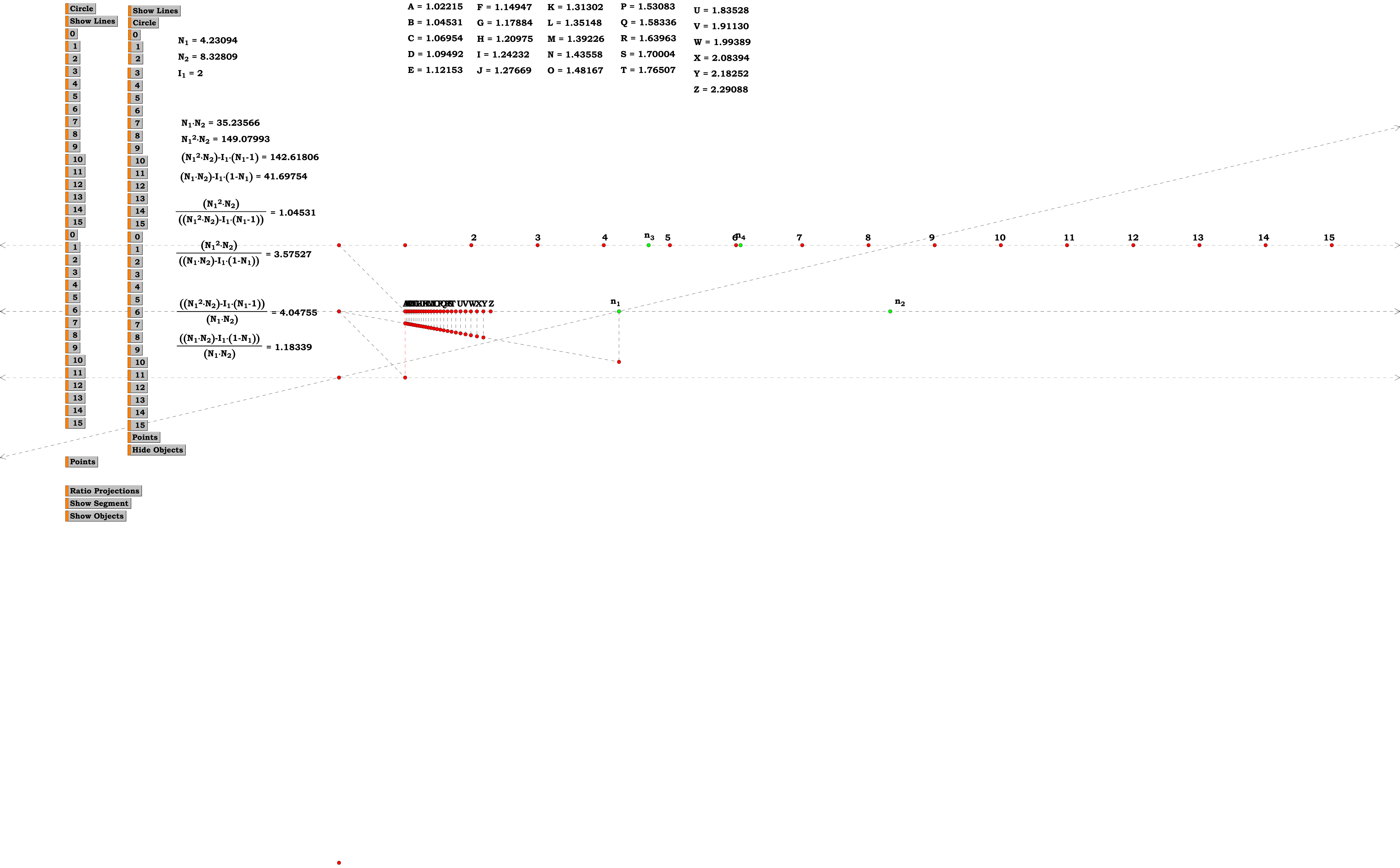
U = 1.83528
V = 1.91130
W = 1.99389
X = 2.08394
Y = 2.18252
Z = 2.29088



$N_1 = 4.23094$

$N_2 = 8.32809$

$I_1 = 2$

A = 1.02215
B = 1.04531
C = 1.06954
D = 1.09492
E = 1.12153
F = 1.14947
G = 1.17884
H = 1.20975
I = 1.24232
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P = 1.53083
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R = 1.63963
S = 1.70004
T = 1.76507
U = 1.83528
V = 1.91130
W = 1.99389
X = 2.08394
Y = 2.18252
Z = 2.29088

$N_1 \cdot N_2 = 35.23566$

$N_1{}^2 \cdot N_2 = 149.07993$

$(N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1) = 142.61806$

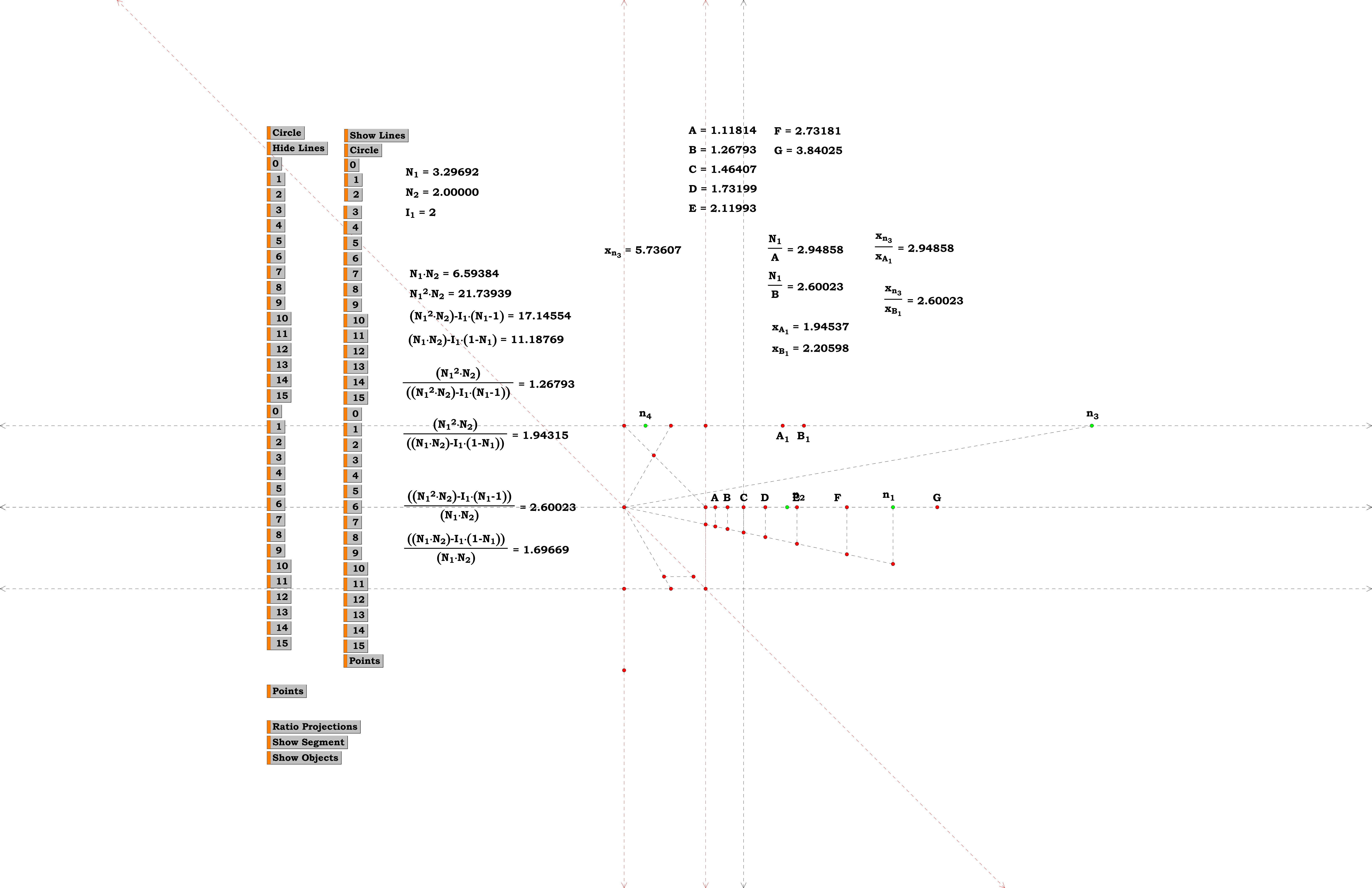
$(N_1 \cdot N_2) - I_1 \cdot (1 - N_1) = 41.69754$

$$\frac{(N_1{}^2 \cdot N_2)}{((N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1))} = 1.04531$$

$$\frac{(N_1{}^2 \cdot N_2)}{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))} = 3.57527$$

$$\frac{((N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1))}{(N_1 \cdot N_2)} = 4.04755$$

$$\frac{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))}{(N_1 \cdot N_2)} = 1.18339$$



$N_1 = 3.29692$

$N_2 = 2.00000$

$I_1 = 2$

$N_1 \cdot N_2 = 6.59384$

$N_1{}^2 \cdot N_2 = 21.73939$

$(N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1) = 17.14554$

$(N_1 \cdot N_2) - I_1 \cdot (1 - N_1) = 11.18769$

$$\frac{(N_1{}^2 \cdot N_2)}{((N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1))} = 1.26793$$

$$\frac{(N_1{}^2 \cdot N_2)}{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))} = 1.94315$$

$$\frac{((N_1{}^2 \cdot N_2) - I_1 \cdot (N_1 - 1))}{(N_1 \cdot N_2)} = 2.60023$$

$$\frac{((N_1 \cdot N_2) - I_1 \cdot (1 - N_1))}{(N_1 \cdot N_2)} = 1.69669$$

$x_{n_3} = 5.73607$

A = 1.11814

B = 1.26793

C = 1.46407

D = 1.73199

E = 2.11993

F = 2.73181

G = 3.84025

$$\frac{N_1}{A} = 2.94858$$

$$\frac{N_1}{B} = 2.60023$$

$$\frac{x_{n_3}}{x_{A_1}} = 2.94858$$

$$\frac{x_{n_3}}{x_{B_1}} = 2.60023$$

$x_{A_1} = 1.94537$

$x_{B_1} = 2.20598$

Index is Base 0

Indexs: $I_{ndx} = 8$ $C_{indx} = 1.00000$

Number of div. by difference at an index.

$$\frac{(I_{ndx} \cdot N_2 - N_1 \cdot N_3) \cdot ((I_{ndx} \cdot N_2 + N_2) - N_1 \cdot N_3)}{N_1 \cdot N_2} = 0.00000$$

Total number of fractions.

$$\frac{N_1 \cdot N_3}{N_2} = 9.00000$$

$$\frac{N_1 \cdot N_3}{N_2} = 9.00000$$

Fraction at Index:

Num: $N_1 \cdot N_3 - I_{ndx} \cdot N_2 = 2.00000$

Den: $N_1 = 3.00000$

$$\frac{(N_1 \cdot N_3 - I_{ndx} \cdot N_2)}{N_1} = 0.66667$$

Fraction at Compliment:

$$\frac{N_1 \cdot N_3 - C_{indx} \cdot N_2}{N_1} = 5.33333$$

$$\frac{(N_1 \cdot N_3 - I_{ndx} \cdot N_2)}{N_1} + \frac{N_1 \cdot N_3 - C_{indx} \cdot N_2}{N_1} = 6.00000$$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

$N_1 = 3.00000$

$N_2 = 2.00000$

$N_3 = 6.00000$

Present 2 Actions

$$\frac{N_3}{N_3+1} = 0.85714$$

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

$$\frac{N_3}{1} = 6.00000$$

$$\frac{N_3}{A} = 5.33333$$

$$\frac{N_3}{B} = 4.66667$$

$$\frac{N_3}{C} = 4.00000$$

$$\frac{N_3}{D} = 3.33333$$

$$\frac{N_3}{E} = 2.66667$$

$$\frac{N_3}{F} = 2.00000$$

$$\frac{N_3}{G} = 1.33333$$

$O_2 = 6.00000$ $I_2 = 2.00000$

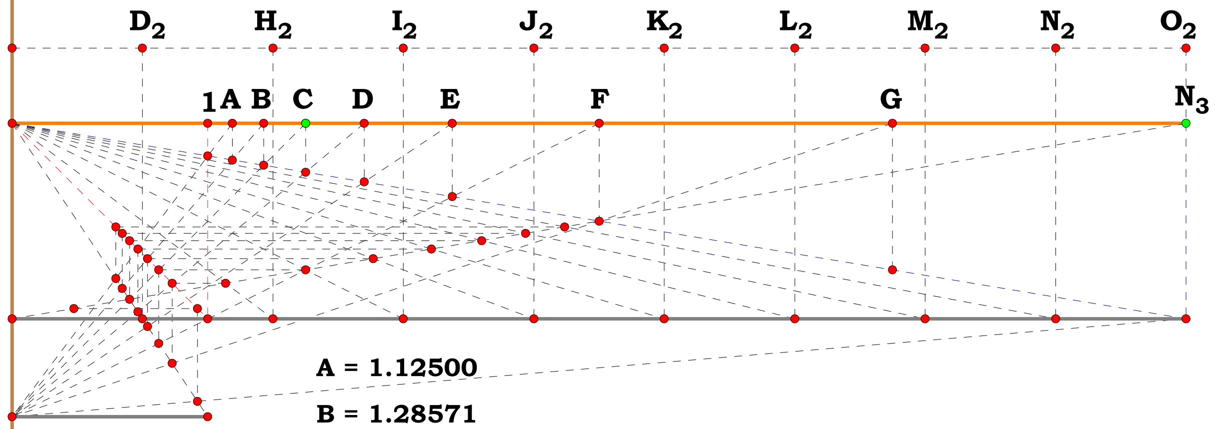
$N_2 = 5.33333$ $H_2 = 1.33333$

$M_2 = 4.66667$

$L_2 = 4.00000$

$K_2 = 3.33333$

$J_2 = 2.66667$ $D_2 = 0.66667$



A = 1.12500

B = 1.28571

C = 1.50000

D = 1.80000

E = 2.25000

F = 3.00000

G = 4.50000

Indexs:

Index = 2 C_{indx} = 7.00

Number of div. by difference at an index.

$$\frac{(Index\cdot(1-N_3)+N_1\cdot N_2\cdot N_3)\cdot((N_3+Index\cdot(1-N_3)+N_1\cdot N_2\cdot N_3)-1)}{N_1\cdot N_2\cdot(N_3-1)} = 40.85000$$

len of frac. $$\frac{N_1\cdot N_2\cdot N_3}{N_1\cdot N_2\cdot N_3-Index\cdot(N_3-1)} = 1.26316$$

Total number of fractions.

$N_1\cdot N_2+1 = 9.00000$

Fraction at Index:

Num: $N_1\cdot N_2\cdot N_3-Index\cdot(N_3-1) = 38.00000$

Den: $N_1\cdot N_2 = 8.00000$

$$\frac{(N_1\cdot N_2\cdot N_3-Index\cdot(N_3-1))}{(N_1\cdot N_2)} = 4.75000$$

Fraction at Compliment:

$$\frac{N_1\cdot N_2\cdot N_3-C_{indx}\cdot(N_3-1)}{N_1\cdot N_2} = 1.62500$$

$$\frac{(N_3-C_{indx}\cdot N_3-Index\cdot N_3)+2\cdot N_1\cdot N_2\cdot N_3}{N_1\cdot N_2} = 6.00000$$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

N_1 = 4.00000
N_2 = 2.00000
N_3 = 6.00000

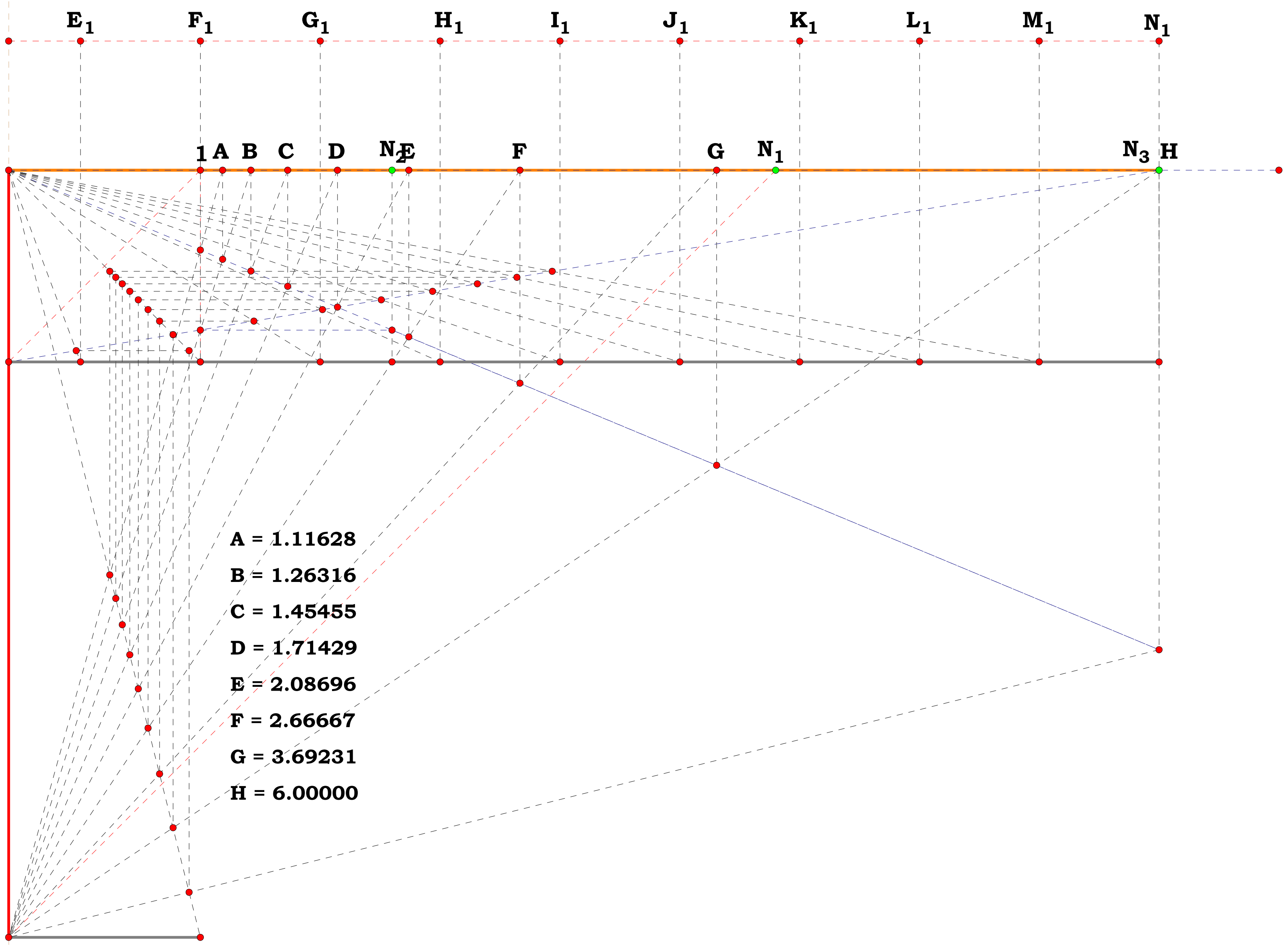
N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

$\frac{N_3}{1}$ = 6.00000
$\frac{N_3}{A}$ = 5.37500
$\frac{N_3}{B}$ = 4.75000
$\frac{N_3}{C}$ = 4.12500
$\frac{N_3}{D}$ = 3.50000

$\frac{N_3}{E}$ = 2.87500
$\frac{N_3}{F}$ = 2.25000
$\frac{N_3}{G}$ = 1.62500
$\frac{N_3}{H}$ = 1.00000

N_1 = 6.00000
M_1 = 5.37500
L_1 = 4.75000
K_1 = 4.12500
J_1 = 3.50000

I_1 = 2.87500
H_1 = 2.25000
G_1 = 1.62500
F_1 = 1.00000
E_1 = 0.37500



A = 1.11628
B = 1.26316
C = 1.45455
D = 1.71429
E = 2.08696
F = 2.66667
G = 3.69231
H = 6.00000

$i_{dx} = 4$

$$\frac{N_0 \cdot N_1 \cdot N_3}{i_{dx} \cdot (N_2 - N_2 \cdot N_0) + N_0 \cdot N_1 \cdot N_3} = 8.00875$$

$$\frac{N_1 \cdot N_3 - i_{dx} \cdot N_2 \cdot (1 - N_0)}{N_1 \cdot N_3} = 3.54661$$

Total number of fractions.

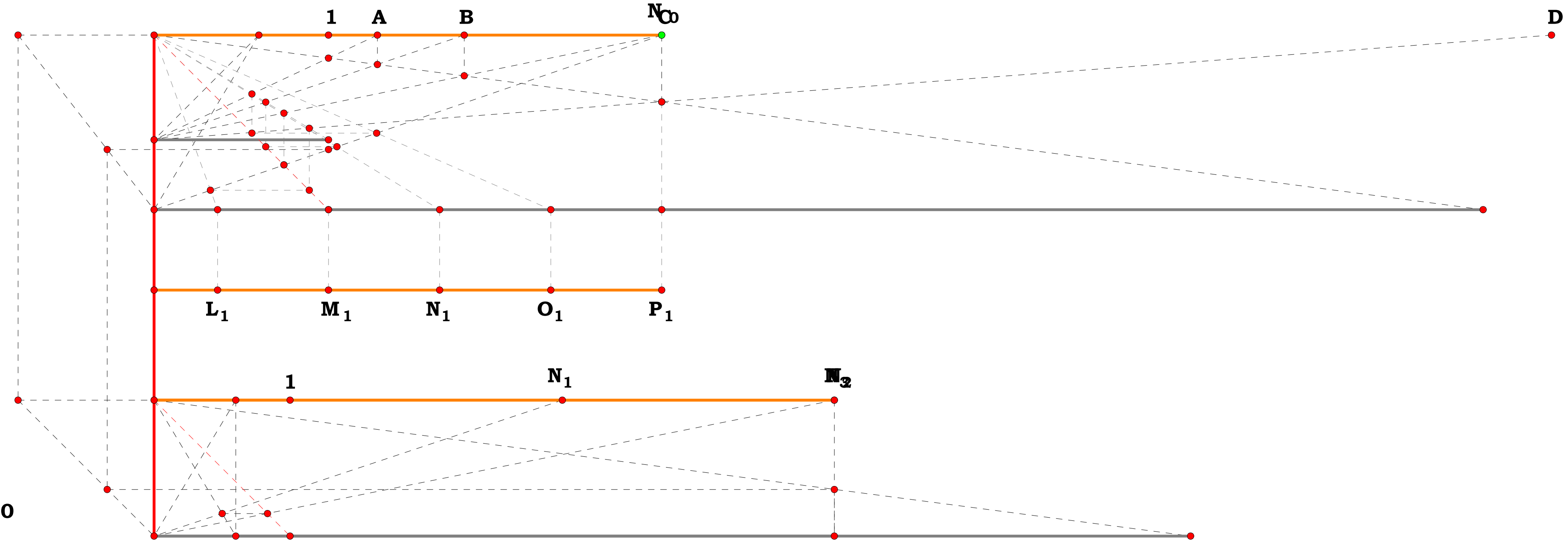
$$\frac{N_1 \cdot N_2 \cdot N_3}{N_2 \cdot N_3} + 1 = 4.00000$$

Fraction at Index:

Num: $i_{dx} \cdot (N_2 - N_0 \cdot N_2) + N_0 \cdot N_1 \cdot N_3 = 5.45021$

Den: $N_1 \cdot N_3 = 15.00000$

$$\frac{(i_{dx} \cdot (N_2 - N_0 \cdot N_2) + N_0 \cdot N_1 \cdot N_3)}{(N_1 \cdot N_3)} = 0.36335$$



$N_0 = 2.90996$ $N_2 = 5.00000$

$N_1 = 3.00000$ $N_3 = 5.00000$ $N_1 \cdot N_3 = 15.00000$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

N [0] -> 0
N [0] -> 1
N [0] -> 2
N [0] -> 3
N [0] -> 4
N [0] -> 5
N [0] -> 6
N [0] -> 7
N [0] -> 8
N [0] -> 9
N [0]-> 10
N [0] -> 11

A = 1.28006
B = 1.77799
C = 2.90996
D = 8.00875

$L_1 = 0.36335$

$P_1 = 2.90996$
$O_1 = 2.27331$
$N_1 = 1.63665$
$M_1 = 1.00000$

$$\frac{N_0}{O_1 - N_1} = 4.57072$$

$$\frac{N_0}{A} = 2.27331$$

$$\frac{N_0}{B} = 1.63665$$

$$\frac{N_0}{C} = 1.00000$$

$$\frac{N_0}{D} = 0.36335$$

N -> 0

N -> 1

N -> 2

N -> 3

N -> 4

N -> 5

N -> 6

N -> 7

N -> 8

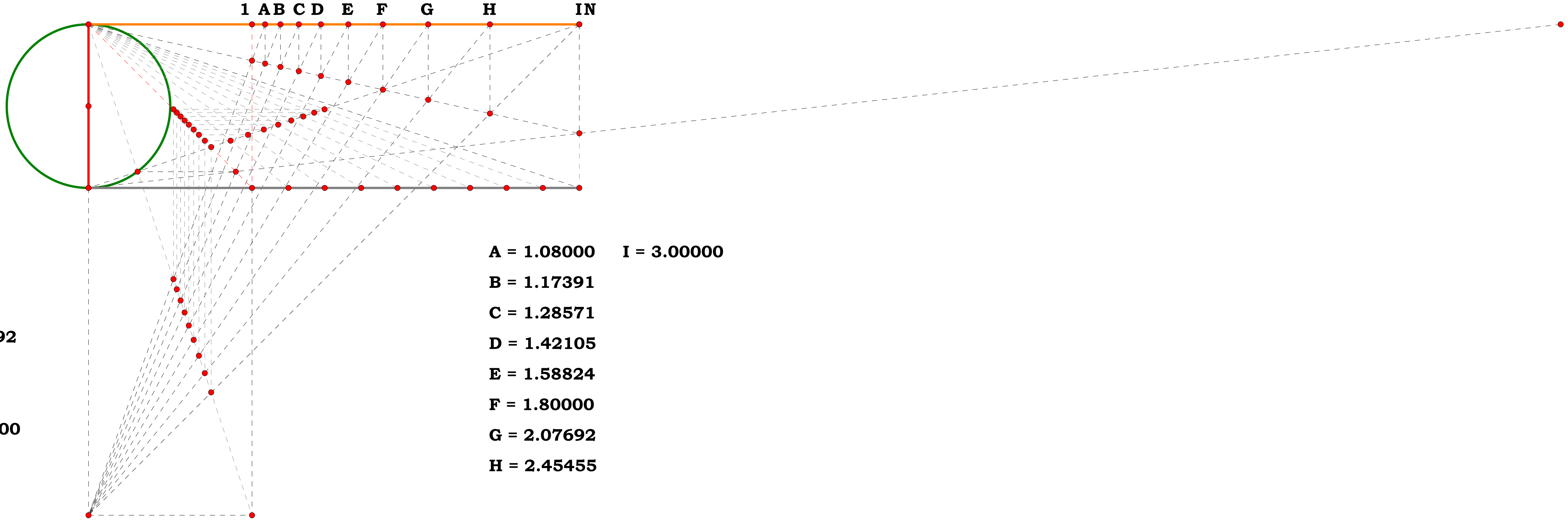
N -> 9

N -> 10

N -> 11

N = 3.00000

Show Objects



$In_{dx} = 7$

$$\frac{N^3}{(N^3-N)+1} = 1.08000$$

$$\frac{N^3}{N^3-In_{dx}\cdot(N-1)} = 2.07692$$

$N^3 = 27.00000$

$N^3-In_{dx}\cdot(N-1) = 13.00000$

$N^2 = 9.00000$

A = 1.08000   I = 3.00000

B = 1.17391

C = 1.28571

D = 1.42105

E = 1.58824

F = 1.80000

G = 2.07692

H = 2.45455

Circle Points Circle Points Circle Points

Show Lines Hide Objects Show Lines Hide Objects Show Lines

0 0 0 0 0 0
1 1 1 1 1 1
2 2 2 2 2 2
3 3 3 3 3 3
4 4 4 4 4 4
5 5 5 5 5 5
6 6 6 6 6 6
7 7 7 7 7 7
8 8 8 8 8 8
9 9 9 9 9 9
10 10 10 10 10 10
11 11 11 11 11 11
12 12 12 12 12 12
13 13 13 13 13 13
14 14 14 14 14 14
15 15 15 15 15 15

$In_{dx} = 0$

$\frac{26.25000}{26.25000} = 1.00000$

$B_3 = 6.17647$

$\frac{N_1}{B_3 - N_1} + 1 = 5.25000$

$\frac{7}{3.75} = 1.86667$

A = 1.03960
B = 1.08247
C = 1.12903
D = 1.17978
E = 1.23529
F = 1.29630
G = 1.36364
H = 1.43836
I = 1.52174
J = 1.61538
K = 1.72131
L = 1.84211
M = 1.98113
N = 2.14286
O = 2.33333
P = 2.56098
Q = 2.83784
R = 3.18182
S = 3.62069
T = 4.20000
U = 5.00000

$N_1 = 5.00000$

$N_2 = 0.00000$

$n_a = 7.00000$

$n_b = 5.00000$

$r_{da} = 1.40000$

$\frac{n_a}{n_b} = 1.40000$

$N_1 \cdot \frac{n_a}{n_b} = 7.00000$

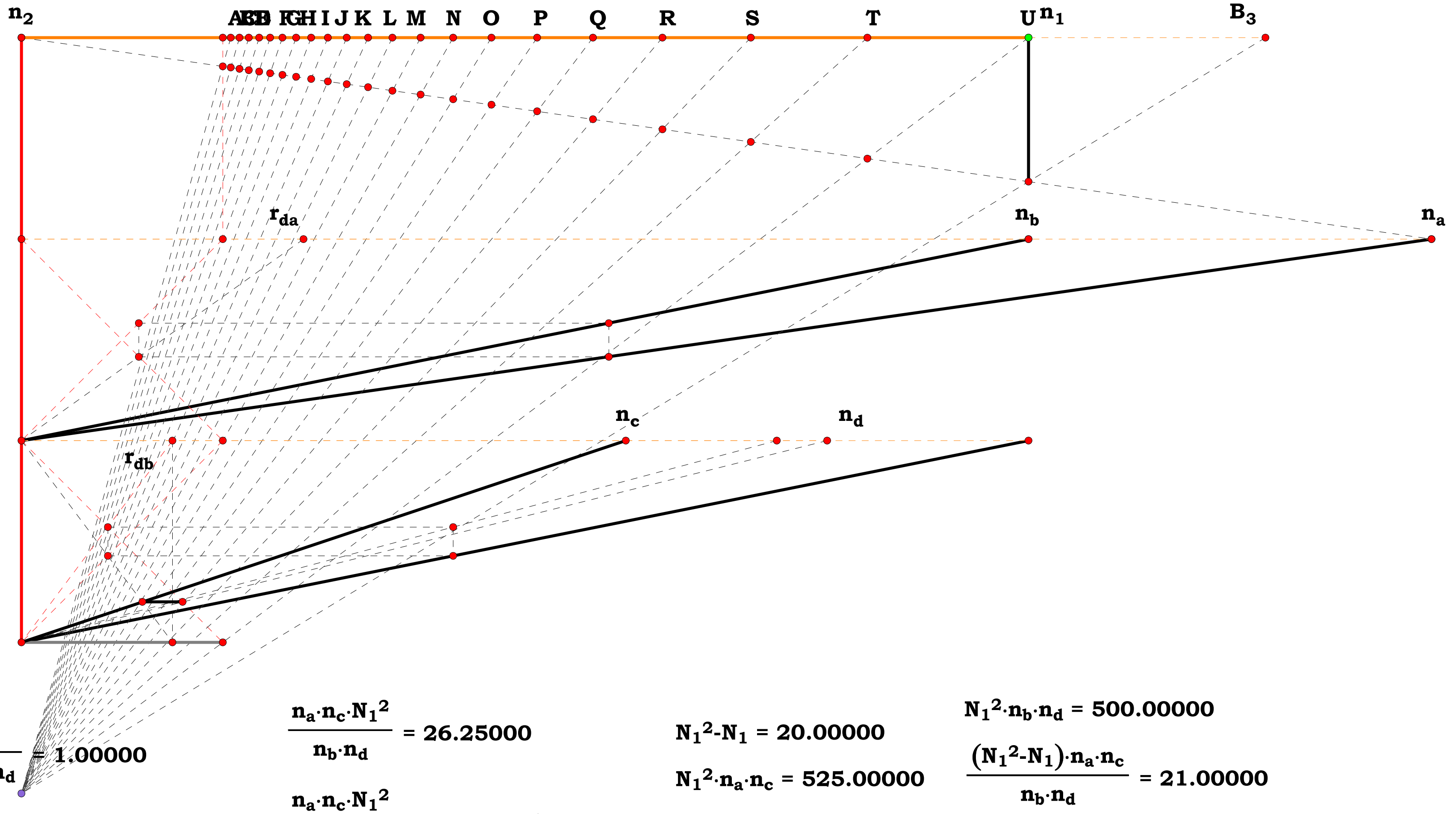
$n_c = 3.00000$

$n_d = 4.00000$

$r_{db} = 0.75000$

$\frac{n_c}{n_d} = 0.75000$

$\frac{n_c}{n_d} \cdot N_1 = 3.75000$



$\frac{N_1^2 \cdot n_a \cdot n_c}{N_1^2 \cdot n_a \cdot n_c - In_{dx} \cdot n_b \cdot n_d} = 1.00000$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} = 26.25000$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} - In_{dx} = 26.25000$

$N_1^2 - N_1 = 20.00000$

$N_1^2 \cdot n_a \cdot n_c = 525.00000$

$N_1^2 \cdot n_b \cdot n_d = 500.00000$

$\frac{(N_1^2 - N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d} = 21.00000$

Circle	Points	Circle	Points	Circle	Points
Show Lines	Hide Objects	Show Lines	Hide Objects	Show Lines	
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15

$N_1 = 5.00000$

$N_2 = 0.00000$

$n_a = 7.00000$

$n_b = 5.00000$

$r_{da} = 1.40000$

$\frac{n_a}{n_b} = 1.40000$

$N_1 \cdot \frac{n_a}{n_b} = 7.00000$

$n_c = 3.00000$

$n_d = 4.00000$

$r_{db} = 0.75000$

$\frac{n_c}{n_d} = 0.75000$

$\frac{n_c}{n_d} \cdot N_1 = 3.75000$

$In_{dx} = 0$

26.25000
26.25000 = 1.00000

$B_3 = 6.17647$

$\frac{N_1}{B_3 - N_1} + 1 = 5.25000$

$\frac{7}{3.75} = 1.86667$

A = 1.03960	J = 1.61538	S = 3.62069
B = 1.08247	K = 1.72131	T = 4.20000
C = 1.12903	L = 1.84211	U = 5.00000
D = 1.17978	M = 1.98113	
E = 1.23529	N = 2.14286	
F = 1.29630	O = 2.33333	
G = 1.36364	P = 2.56098	
H = 1.43836	Q = 2.83784	
I = 1.52174	R = 3.18182	

26.25+5.25 = 31.50000

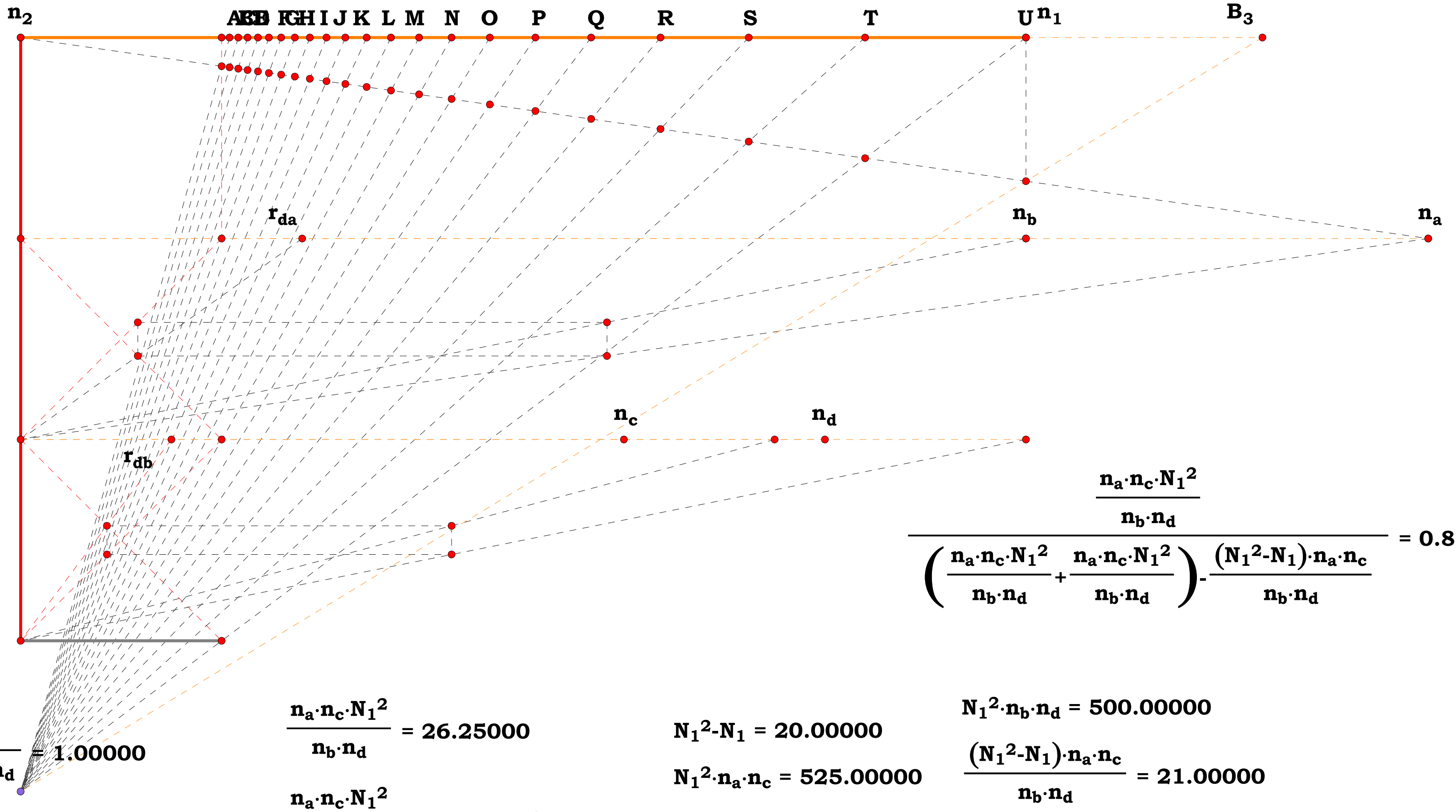
25.25+6.25 = 31.50000

24.25+7.25 = 31.50000

$\frac{26.25}{(26.25+5.25)} = 0.83333$

$\frac{26.25}{(25.25+6.25)} = 0.83333$

$\frac{26.25}{(24.25+7.25)} = 0.83333$



$$\frac{\frac{n_a \cdot n_c \cdot N_1{}^2}{n_b \cdot n_d}}{\left(\frac{n_a \cdot n_c \cdot N_1{}^2}{n_b \cdot n_d} + \frac{n_a \cdot n_c \cdot N_1{}^2}{n_b \cdot n_d}\right) - \frac{(N_1{}^2 - N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d}} = 0.83333$$

$\frac{N_1}{N_1 + 1} = 0.83333$

$\frac{m_3}{m_3 - 1} = 1.03960$

$\frac{N_1{}^2 \cdot n_a \cdot n_c}{N_1{}^2 \cdot n_a \cdot n_c - In_{dx} \cdot n_b \cdot n_d} = 1.00000$

$\frac{n_a \cdot n_c \cdot N_1{}^2}{n_b \cdot n_d} = 26.25000$

$\frac{n_a \cdot n_c \cdot N_1{}^2}{n_b \cdot n_d} - In_{dx} = 26.25000$

$N_1{}^2 - N_1 = 20.00000$

$N_1{}^2 \cdot n_a \cdot n_c = 525.00000$

$N_1{}^2 \cdot n_b \cdot n_d = 500.00000$

$\frac{(N_1{}^2 - N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d} = 21.00000$

Circle

Show Lines

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

$N_1 = 4.00000$

$$\frac{N_1^2}{N_1^2 - I_{ndx}\cdot(N_1-1)} = 4.00000$$

$I_{ndx} = 4$

$N_1\cdot(N_1-1)+1 = 13.00000$

$$\frac{N_1^3 - N_1\cdot(N_1-1)}{N_1^3-(N_1-1)\cdot(N_1+I_{ndx})} = 1.30000$$

L = 1.06122

M = 1.13043

N = 1.20930

O = 1.30000

P = 1.40541

Q = 1.52941

R = 1.67742

S = 1.85714

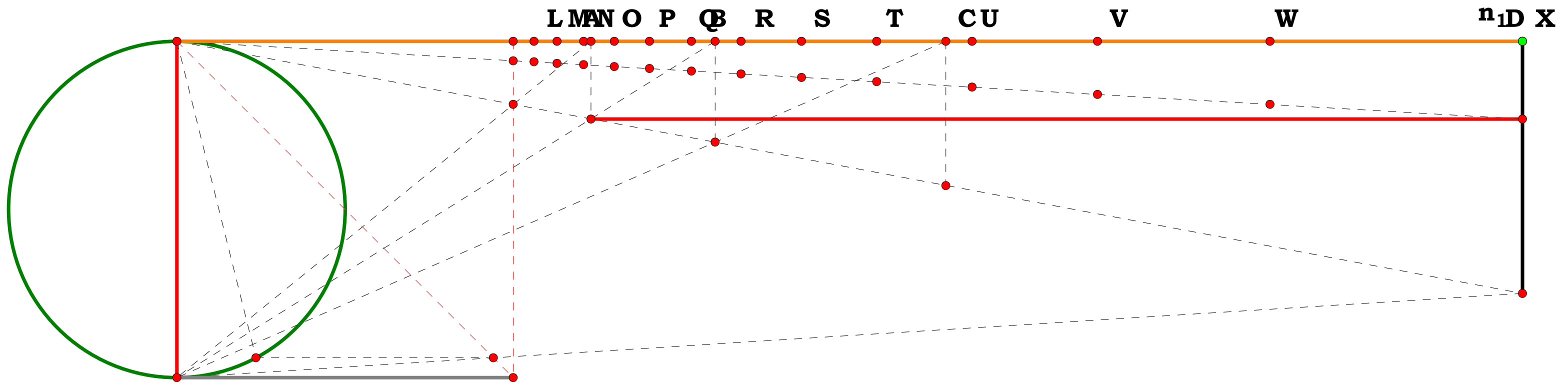
T = 2.08000

U = 2.36364

V = 2.73684

W = 3.25000

X = 4.00000



Hide Objects

Hide Objects

Hide Objects

Hide Objects

A = 1.23077

B = 1.60000

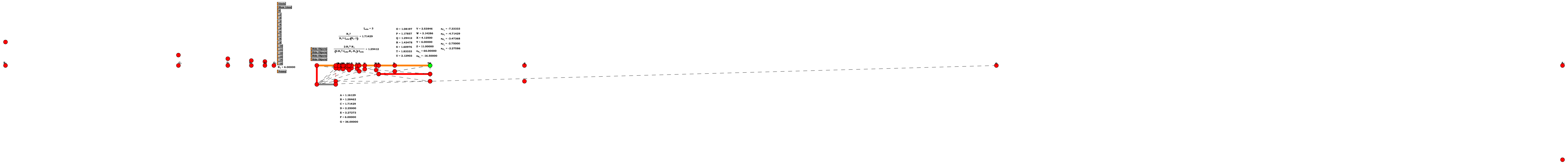
C = 2.28571

D = 4.00000

Hide Objects

$N_1 = 4.00000$

Points



$N_1 = 6.00000$

$I_{ndx} = 3$

$$\frac{N_1^2}{N_1^2 - I_{ndx} \cdot (N_1 - 1)} = 1.71429$$

$$\frac{2 \cdot N_1^2 - N_1}{(2 \cdot N_1^2 - I_{ndx} \cdot N_1 - N_1) + I_{ndx}} = 1.29412$$

O = 1.08197
P = 1.17857
Q = 1.29412
R = 1.43478
S = 1.60976
T = 1.83333
U = 2.12903

V = 2.53846
W = 3.14286
X = 4.12500
Y = 6.00000
Z = 11.00000
$x_{A_1} = 66.00000$
$x_{B_1} = -16.50000$

$x_{C_1} = -7.33333$
$x_{D_1} = -4.71429$
$x_{E_1} = -3.47368$
$x_{F_1} = -2.75000$
$x_{G_1} = -2.27586$

A = 1.16129
B = 1.38462
C = 1.71429
D = 2.25000
E = 3.27273
F = 6.00000
G = 36.00000

Circle
Show Lines
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

Circle
Show Lines
0
1
2
3
4
5
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7
8
9
10
11
12
13
14
15

$I_{ndx} = 3$

$N_1 \cdot n_3 = 20.00000$

$N_1^2 \cdot n_3 = 100.00000$

$N_1^2 \cdot n_3 - I_{ndx} \cdot (N_1 - 1) = 88.00000$

$$\frac{(N_1^2 \cdot n_3)}{(N_1^2 \cdot n_3 - I_{ndx} \cdot (N_1 - 1))} = 1.13636$$

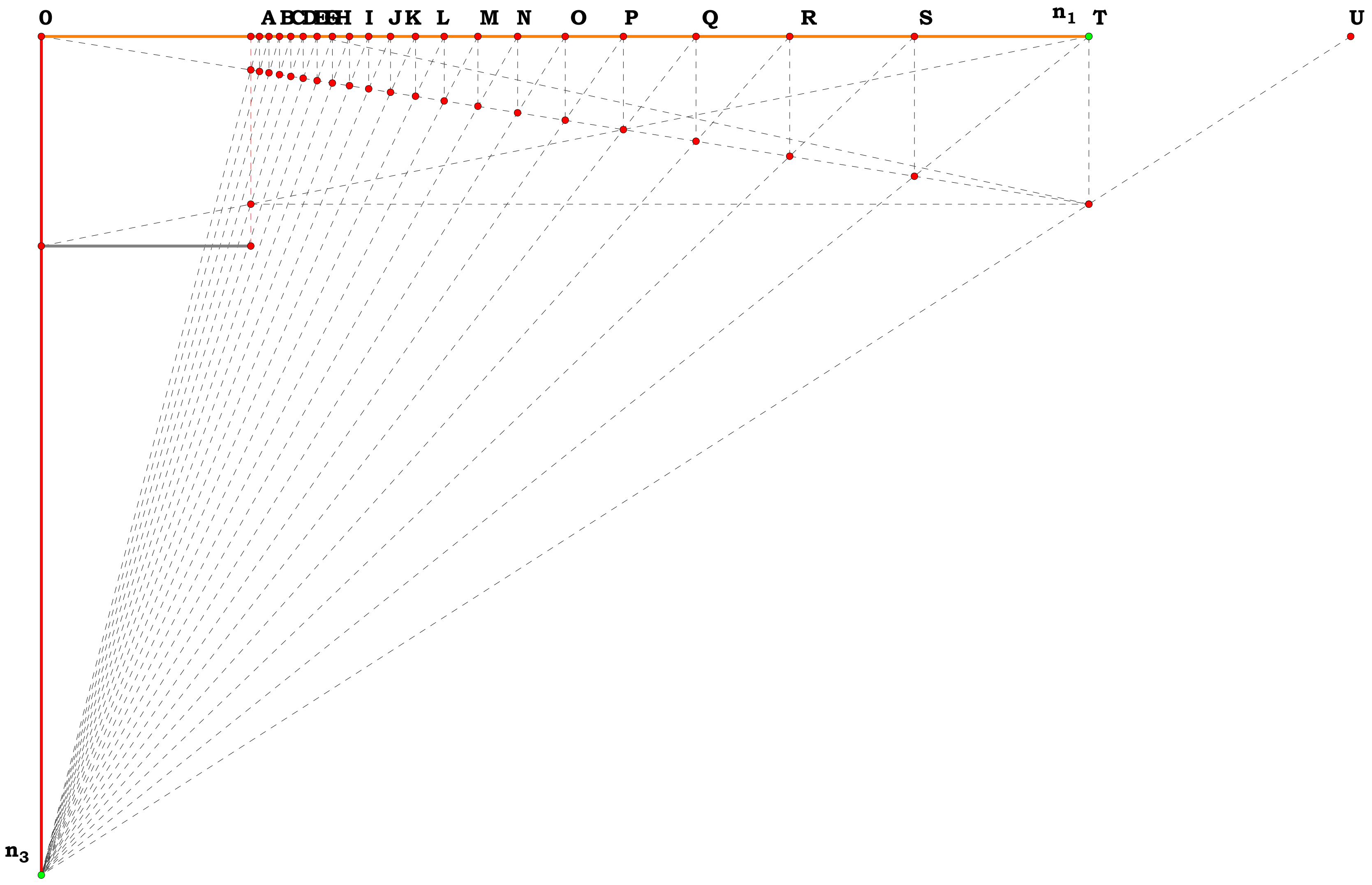
A = 1.04167
B = 1.08696
C = 1.13636
D = 1.19048
E = 1.25000
F = 1.31579
G = 1.38889
H = 1.47059
I = 1.56250
J = 1.66667
K = 1.78571
L = 1.92308
M = 2.08333
N = 2.27273
O = 2.50000
P = 2.77778
Q = 3.12500
R = 3.57143
S = 4.16667
T = 5.00000
U = 6.25000

$N_1 = 5.00000$

$n_3 = 4.00000$

Points

Points



Construction:

Construction of a figure.

Index is Base 0

Index: $I_{ndx} = 0$

Number of div. by difference at an index.

$$\frac{(I_{ndx}\cdot N_2 - N_1\cdot N_3)\cdot((I_{ndx}\cdot N_2 + N_2) - N_1\cdot N_3)}{N_1\cdot N_2} = 36.00000$$

Total number of fractions.

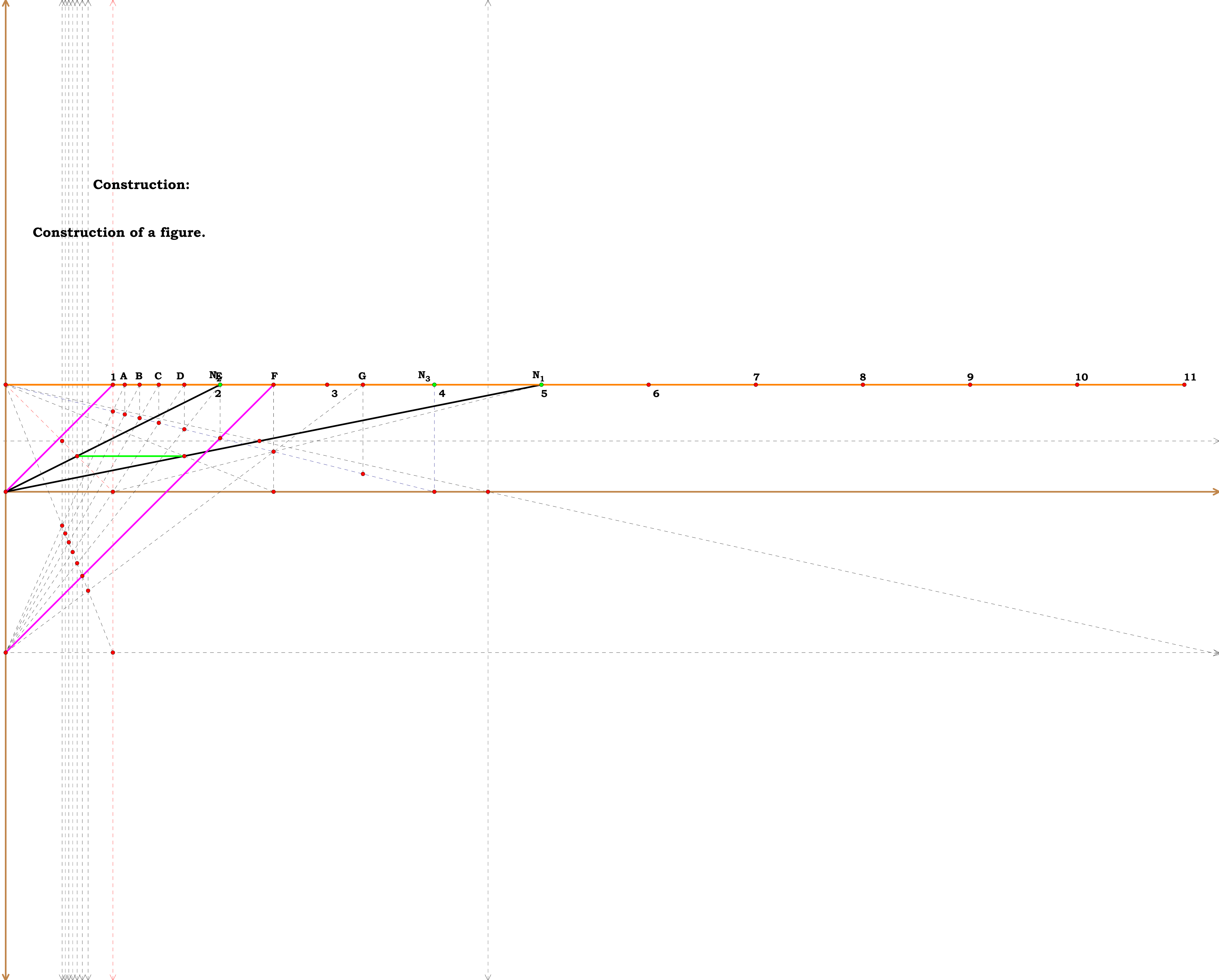
$$\frac{N_1\cdot(N_3-1)}{N_2} = 7.50000$$

Fraction at Index:

Num: $N_1\cdot N_3 - I_{ndx}\cdot N_2 = 20.00000$

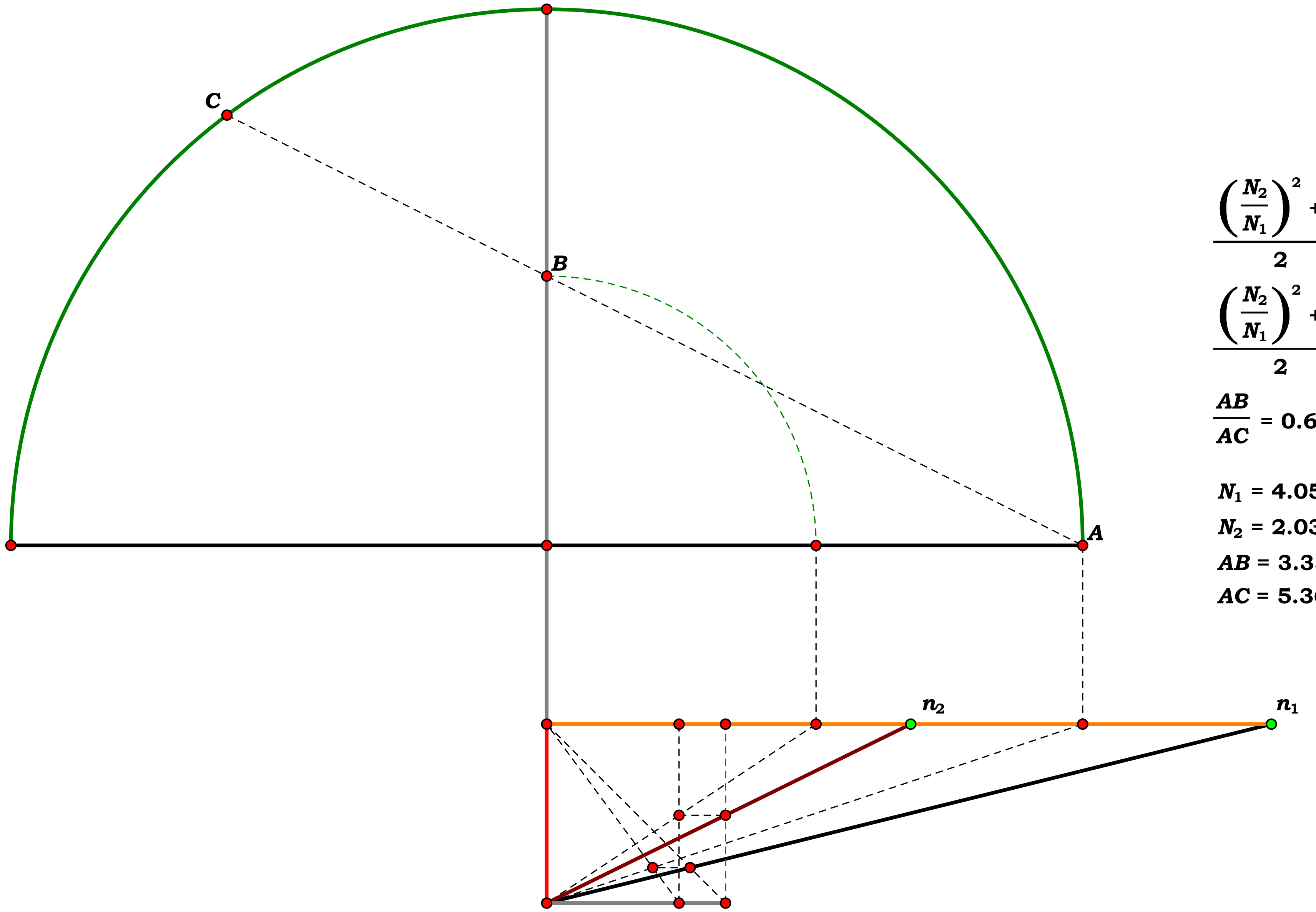
Den: $N_2 = 2.00000$

$$\frac{(N_1\cdot N_3 - I_{ndx}\cdot N_2)}{N_2} = 10.00000$$



N[1] -> 0	N[2] -> 0	$N_1 = 5.00000$	N[3] -> 0
N[1] -> 1	N[2] -> 1	$N_2 = 2.00000$	N[3] -> 1
N[1] -> 2	N[2] -> 2	$N_3 = 4.00000$	N[3] -> 2
N[1] -> 3	N[2] -> 3		N[3] -> 3
N[1] -> 4	N[2] -> 4		N[3] -> 4
N[1] -> 5	N[2] -> 5		N[3] -> 5
N[1] -> 6	N[2] -> 6		N[3] -> 6
N[1] -> 7	N[2] -> 7		N[3] -> 7
N[1] -> 8	N[2] -> 8		N[3] -> 8
N[1] -> 9	N[2] -> 9		N[3] -> 9
N[1] -> 10	N[2] -> 10		N[3] -> 10
N[1] -> 11	N[2] -> 11		N[3] -> 11

Show Intersection



$$\frac{\left(\frac{N_2}{N_1}\right)^2 + 1}{2} - \frac{AB}{AC} = 0.00000$$

$$\frac{\left(\frac{N_2}{N_1}\right)^2 + 1}{2} = 0.62621$$

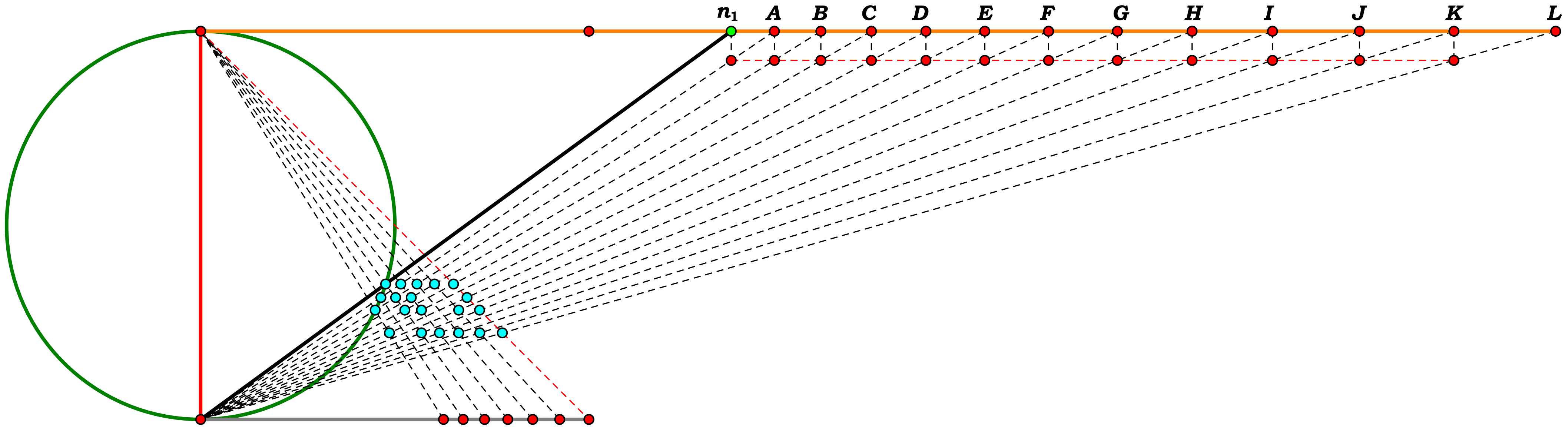
$$\frac{AB}{AC} = 0.62621$$

$N_1 = 4.05604$

$N_2 = 2.03783$

$AB = 3.35735$

$AC = 5.36137$



$N_1 = 1.36693$

$A = 1.47803$
$B = 1.59816$
$C = 1.72805$
$D = 1.86850$

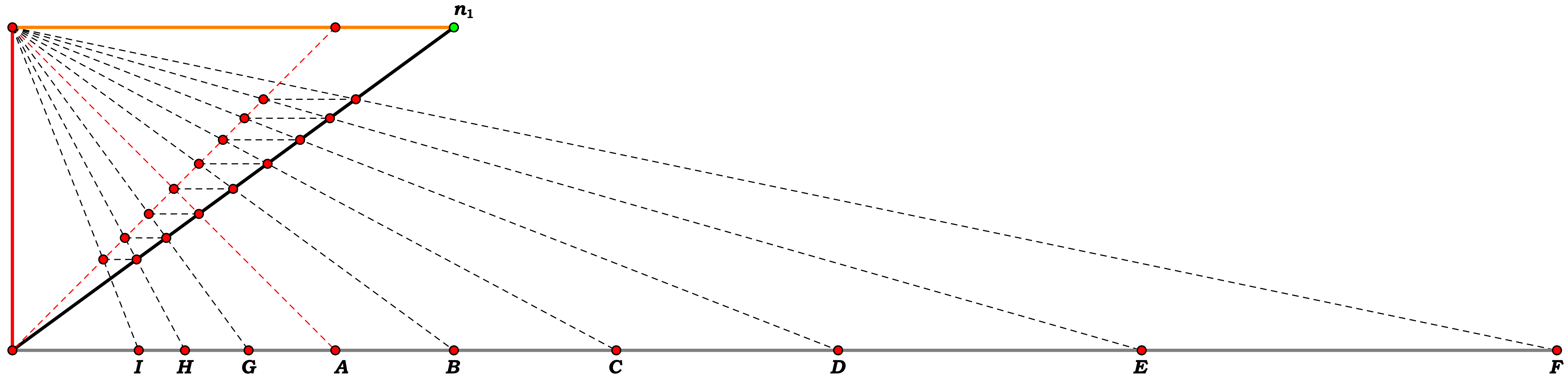
$E = 2.02036$
$F = 2.18457$
$G = 2.36212$
$H = 2.55410$

$I = 2.76169$
$J = 2.98615$
$K = 3.22885$
$L = 3.49128$

$N_1^{1.25} - A = 0.00000$
$N_1^{1.5} - B = 0.00000$
$N_1^{1.75} - C = 0.00000$
$N_1^{2} - D = 0.00000$

$N_1^{2.25} - E = 0.00000$
$N_1^{2.5} - F = 0.00000$
$N_1^{2.75} - G = 0.00000$
$N_1^{3} - H = 0.00000$

$N_1^{3.25} - I = 0.00000$
$N_1^{3.5} - J = 0.00000$
$N_1^{3.75} - K = 0.00000$
$N_1^{4} - L = 0.00000$



$N_1 = 1.36763$

$A = 1.00000$
$B = 1.36763$
$C = 1.87042$
$D = 2.55805$

$E = 3.49847$
$F = 4.78462$
$G = 0.73119$
$H = 0.53464$
$I = 0.39092$

$N_1^0 - A = 0.00000$
$N_1^1 - B = 0.00000$
$N_1^2 - C = 0.00000$
$N_1^3 - D = 0.00000$

$N_1^4 - E = 0.00000$
$N_1^5 - F = 0.00000$
$N_1^{-1} - G = 0.00000$
$N_1^{-2} - H = 0.00000$
$N_1^{-3} - I = 0.00000$

$N_1 = 2.10483$

$N_2 = 2.59960$

$x_A = 2.10483$

$x_B = 2.59960$

$x_C = 3.21068$

$x_D = 3.96539$

$x_E = 4.89752$

$x_F = 1.70423$

$x_G = 1.37987$

$x_H = 1.11724$

$x_I = 0.90460$

$$\frac{N_2^{0}}{N_1^{-1}} = 2.10483$$

$$\frac{N_2^{1}}{N_1^{0}} = 2.59960$$

$$\frac{N_2^{2}}{N_1^{1}} = 3.21068$$

$$\frac{N_2^{3}}{N_1^{2}} = 3.96539$$

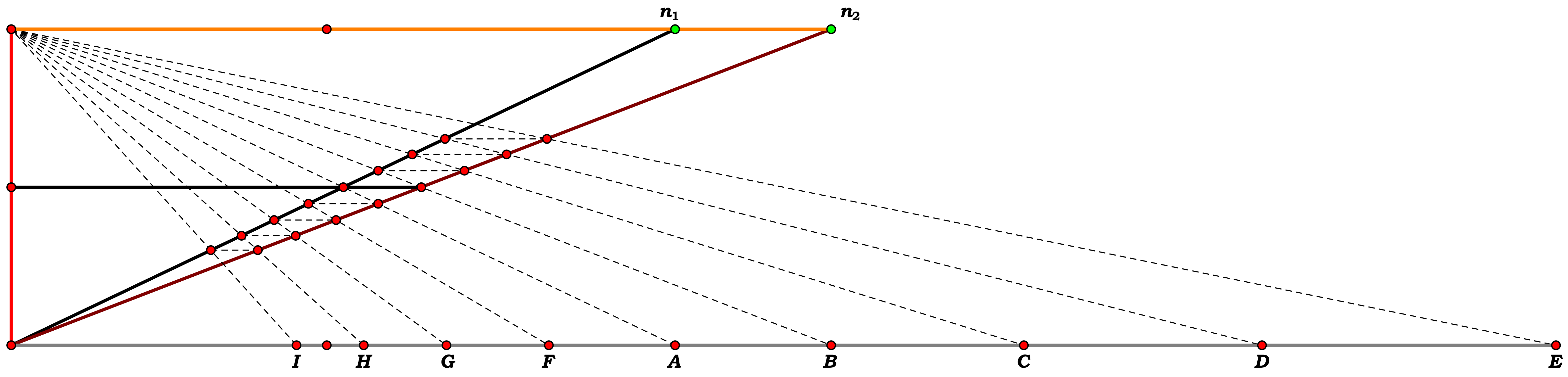
$$\frac{N_2^{4}}{N_1^{3}} = 4.89752$$

$$\frac{N_2^{-1}}{N_1^{-2}} = 1.70423$$

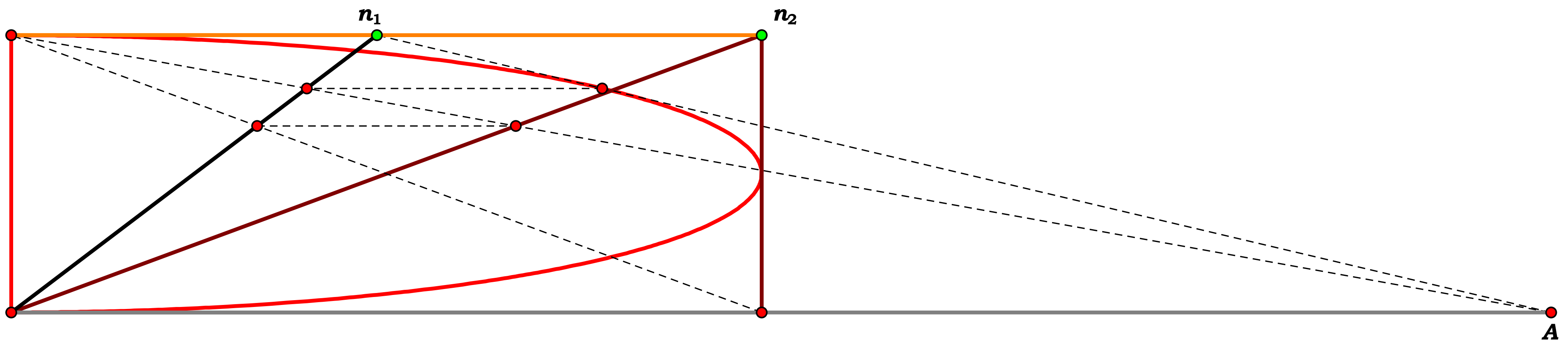
$$\frac{N_2^{-2}}{N_1^{-3}} = 1.37987$$

$$\frac{N_2^{-3}}{N_1^{-4}} = 1.11724$$

$$\frac{N_2^{-4}}{N_1^{-5}} = 0.90460$$



From any point n_1 draw the tangent to the ellipse n_2. Or given the square n_2 divide it by n_1.



$N_1 = 1.32088$

$N_2 = 2.71076$

$A = 5.56312$

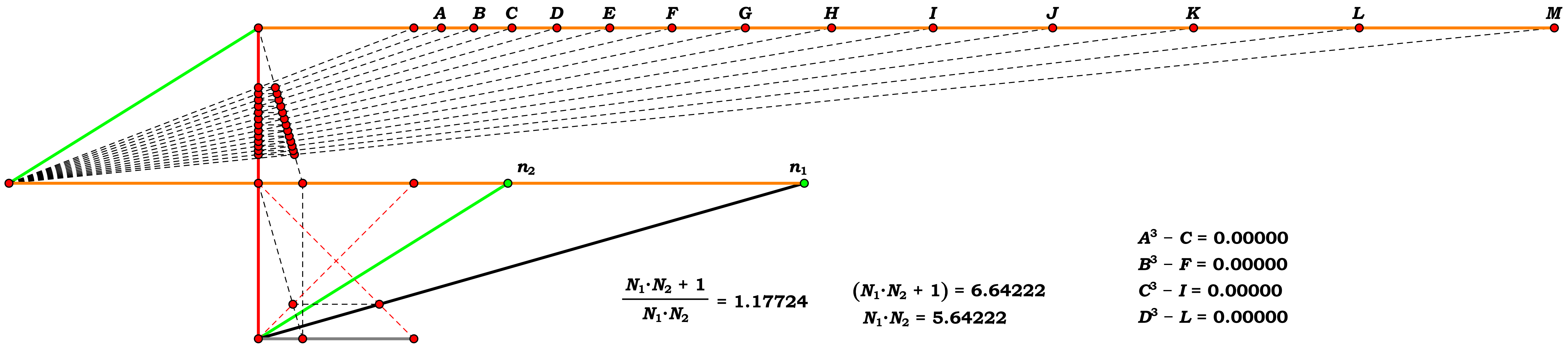
$\frac{N_2^2}{N_1} - A = 0.00000$

$A^2 - B = 0.00000$
$(A \cdot B) - C = 0.00000$
$B^2 - D = 0.00000$
$(B \cdot C) - E = 0.00000$

$C^2 - F = 0.00000$
$(C \cdot D) - G = 0.00000$
$D^2 - H = 0.00000$
$(D \cdot E) - I = 0.00000$

$E^2 - J = 0.00000$
$(E \cdot F) - K = 0.00000$
$F^2 - L = 0.00000$
$(F \cdot G) - M = 0.00000$

$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^1 - A = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^2 - B = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^3 - C = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^4 - D = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^5 - E = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^6 - F = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^7 - G = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^8 - H = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^9 - I = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{10} - J = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{11} - K = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{12} - L = 0.00000$$
$$\left(\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2}\right)^{13} - M = 0.00000$$



$$\frac{N_1 \cdot N_2 + 1}{N_1 \cdot N_2} = 1.17724$$

$(N_1 \cdot N_2 + 1) = 6.64222$
$N_1 \cdot N_2 = 5.64222$

$A^3 - C = 0.00000$
$B^3 - F = 0.00000$
$C^3 - I = 0.00000$
$D^3 - L = 0.00000$

$N_1 = 3.51340$
$N_2 = 1.60591$

$A = 1.17724$
$B = 1.38588$
$C = 1.63151$
$D = 1.92067$
$E = 2.26108$

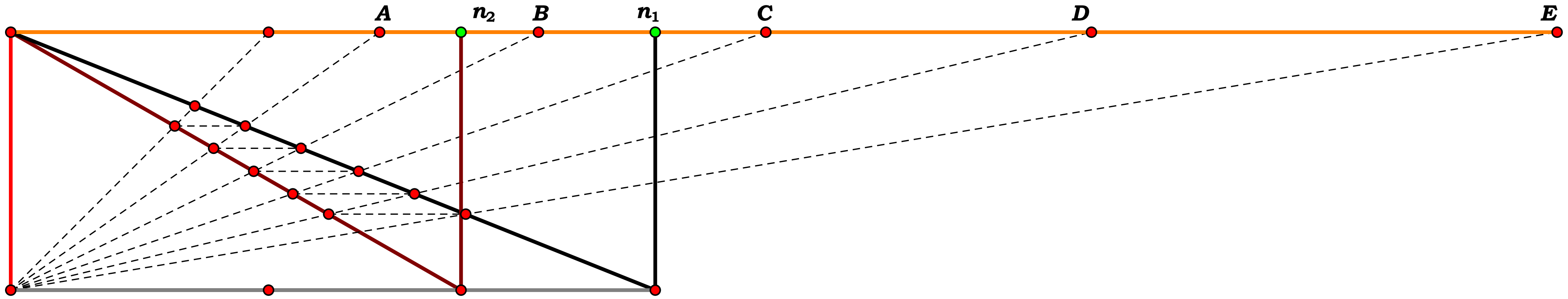
$F = 2.66183$
$G = 3.13360$
$H = 3.68898$
$I = 4.34280$

$J = 5.11249$
$K = 6.01861$
$L = 7.08532$
$M = 8.34108$

$A^2 = 1.38588$
$A \cdot B = 1.63151$
$B^2 = 1.92067$
$B \cdot C = 2.26108$

$C^2 = 2.66183$
$C \cdot D = 3.13360$
$D^2 = 3.68898$
$D \cdot E = 4.34280$

$E^2 = 5.11249$
$E \cdot F = 6.01861$
$F^2 = 7.08532$
$F \cdot G = 8.34108$



$A = 1.43109$

$B = 2.04801$

$C = 2.93088$

$D = 4.19435$

$E = 6.00248$

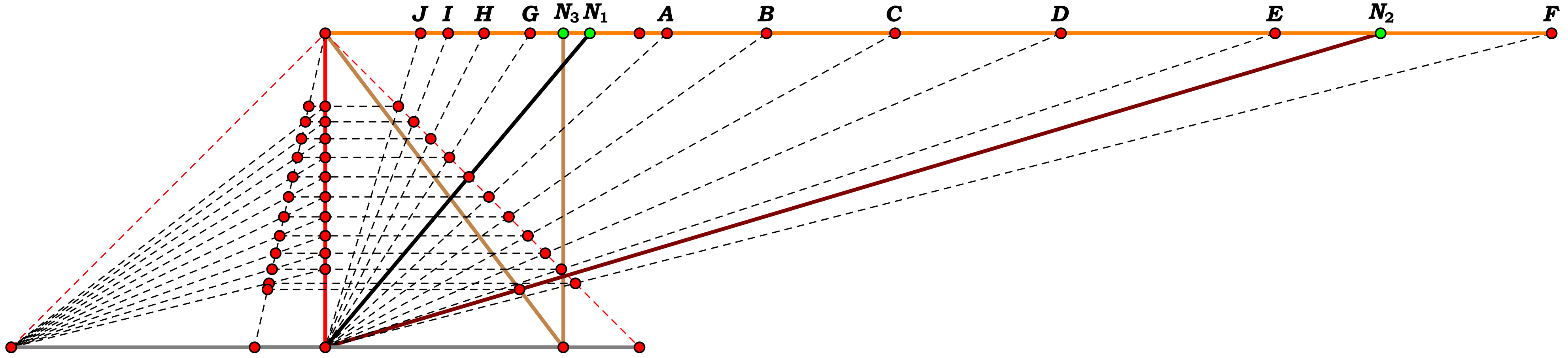
$\frac{N_1}{N_2} - A = 0.00000$

$\left(\frac{N_1}{N_2}\right)^2 - B = 0.00000$

$\left(\frac{N_1}{N_2}\right)^3 - C = 0.00000$

$\left(\frac{N_1}{N_2}\right)^4 - D = 0.00000$

$\left(\frac{N_1}{N_2}\right)^5 - E = 0.00000$



$$\left(\frac{N_1^{\frac{1}{4}}\cdot N_2}{N_2 - N_3}\right)^4 - D = 0.00000$$

$$\frac{N_1\cdot N_2^4}{(N_2 - N_3)^4} - D = 0.00000$$

$$\frac{N_2}{N_2 - N_3} = 1.29123$$

$N_1 = 0.84255$

$N_2 = 3.35986$

$N_3 = 0.75780$

$A = 1.08792$

$B = 1.40476$

$C = 1.81388$

$D = 2.34214$

$E = 3.02425$

$F = 3.90501$

$G = 0.65251$

$H = 0.50534$

$I = 0.39136$

$J = 0.30309$

$$\left(\frac{N_2}{N_2 - N_3}\right)^1\cdot N_1 - A = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^2\cdot N_1 - B = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^3\cdot N_1 - C = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^4\cdot N_1 - D = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^5\cdot N_1 - E = 0.00000$$

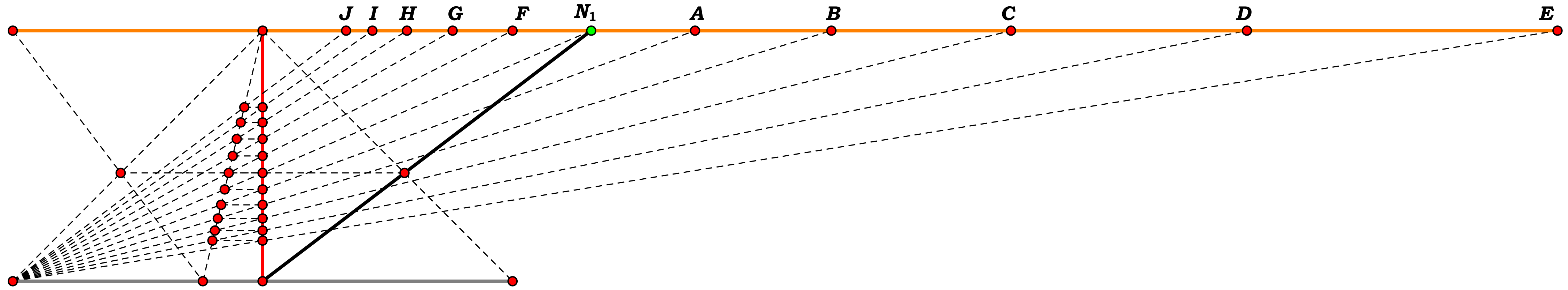
$$\left(\frac{N_2}{N_2 - N_3}\right)^6\cdot N_1 - F = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^{-1}\cdot N_1 - G = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^{-2}\cdot N_1 - H = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^{-3}\cdot N_1 - I = 0.00000$$

$$\left(\frac{N_2}{N_2 - N_3}\right)^{-4}\cdot N_1 - J = 0.00000$$



$N_1 = 1.31554$

$A = 1.73065$

$B = 2.27675$

$C = 2.99516$

$D = 3.94026$

$E = 5.18358$

$F = 1.00000$

$G = 0.76014$

$H = 0.57782$

$I = 0.43922$

$J = 0.33387$

$N_1^2 - A = 0.00000$

$N_1^3 - B = 0.00000$

$N_1^4 - C = 0.00000$

$N_1^5 - D = 0.00000$

$N_1^6 - E = 0.00000$

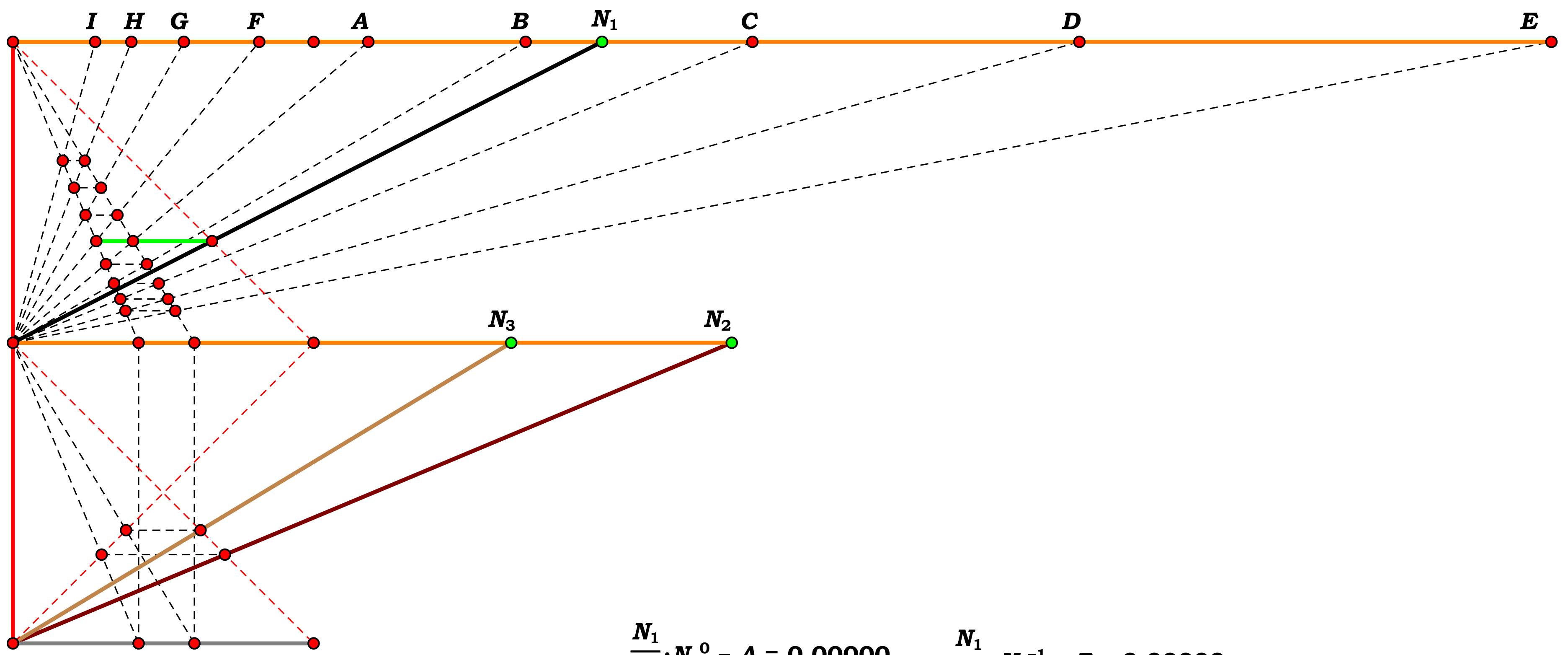
$N_1^0 - F = 0.00000$

$N_1^{-1} - G = 0.00000$

$N_1^{-2} - H = 0.00000$

$N_1^{-3} - I = 0.00000$

$N_1^{-4} - J = 0.00000$



$N_1 = 1.95987$

$N_2 = 2.39124$

$N_3 = 1.65771$

$A = 1.18227$

$B = 1.70541$

$C = 2.46005$

$D = 3.54859$

$E = 5.11881$

$F = 0.81960$

$G = 0.56819$

$H = 0.39389$

$I = 0.27306$

$$\frac{N_1}{N_3} \cdot N_2^{0} - A = 0.00000$$

$$\frac{N_1}{N_3^{2}} \cdot N_2 - B = 0.00000$$

$$\frac{N_1}{N_3^{3}} \cdot N_2^{2} - C = 0.00000$$

$$\frac{N_1}{N_3^{4}} \cdot N_2^{3} - D = 0.00000$$

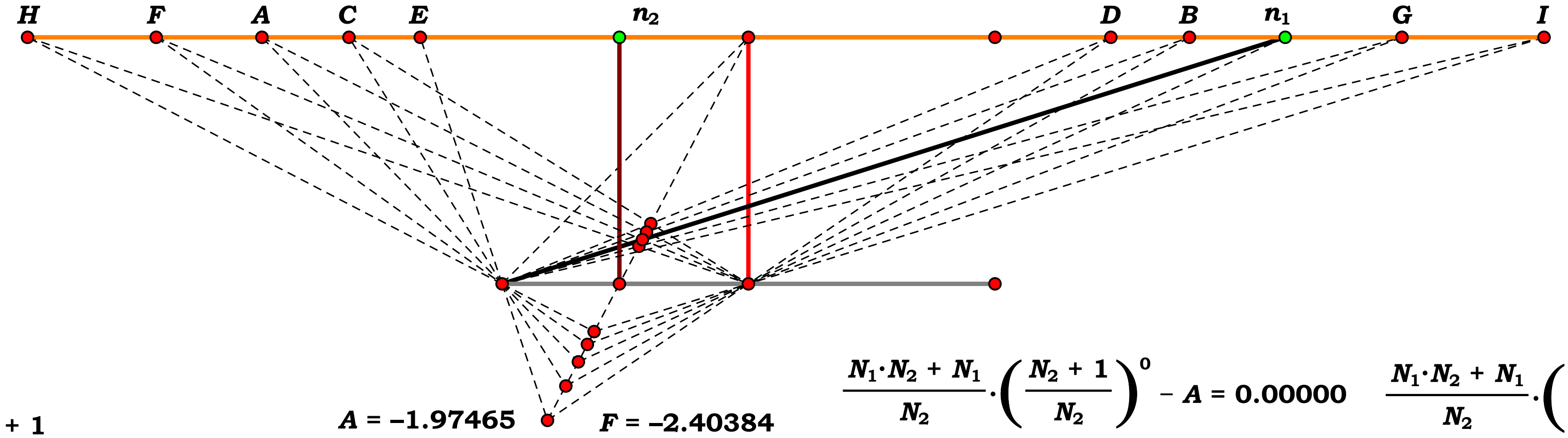
$$\frac{N_1}{N_3^{5}} \cdot N_2^{4} - E = 0.00000$$

$$\frac{N_1}{N_3^{0}} \cdot N_2^{-1} - F = 0.00000$$

$$\frac{N_1}{N_3^{-1}} \cdot N_2^{-2} - G = 0.00000$$

$$\frac{N_1}{N_3^{-2}} \cdot N_2^{-3} - H = 0.00000$$

$$\frac{N_1}{N_3^{-3}} \cdot N_2^{-4} - I = 0.00000$$



$$\frac{N_2 + 1}{N_2} = -0.90634$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} = -1.97465$$

$N_1 = 2.17870$

$N_2 = -0.52456$

$A = -1.97465$

$B = 1.78970$

$C = -1.62208$

$D = 1.47016$

$E = -1.33247$

$F = -2.40384$

$G = 2.65225$

$H = -2.92632$

$I = 3.22872$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{0} - A = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{1} - B = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{2} - C = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{3} - D = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{4} - E = 0.00000$$

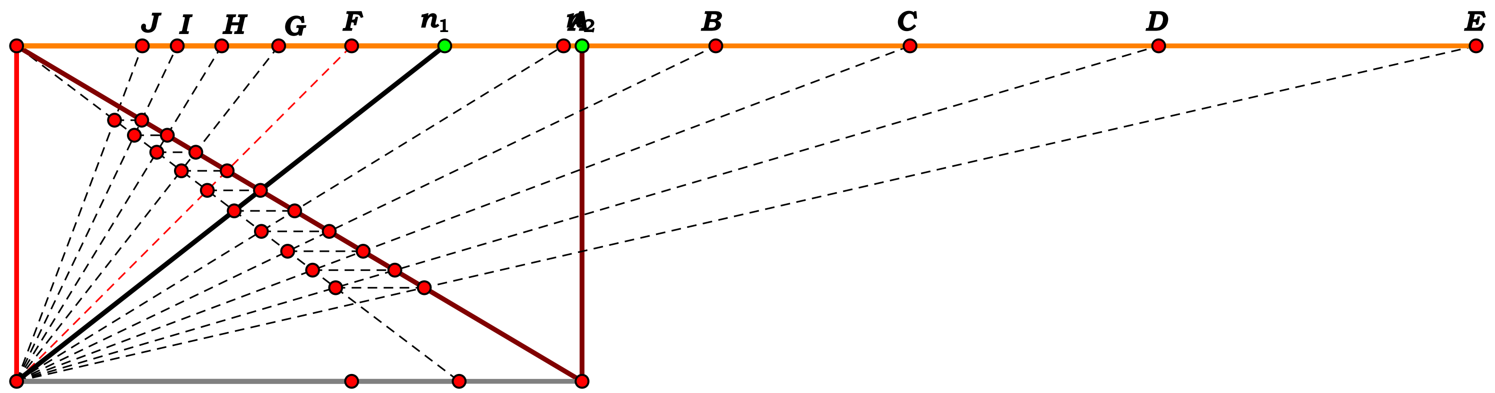
$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-1} - N_1 = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-2} - F = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-3} - G = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-4} - H = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-5} - I = 0.00000$$



$N_1 = 1.27809$

$N_2 = 1.68896$

$A = 1.63353$

$B = 2.08780$

$C = 2.66841$

$D = 3.41048$

$E = 4.35891$

$F = 1.00000$

$G = 0.78241$

$H = 0.61217$

$I = 0.47897$

$J = 0.37476$

$N_1{}^2 - A = 0.00000$

$N_1{}^3 - B = 0.00000$

$N_1{}^4 - C = 0.00000$

$N_1{}^5 - D = 0.00000$

$N_1{}^6 - E = 0.00000$

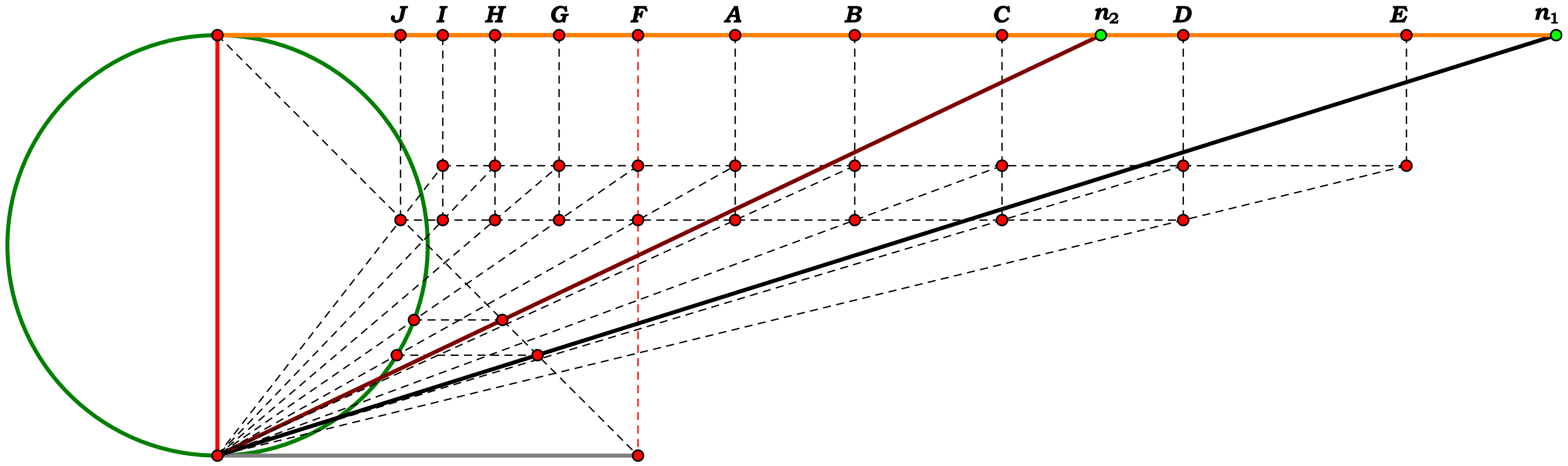
$N_1{}^0 - F = 0.00000$

$N_1{}^{-1} - G = 0.00000$

$N_1{}^{-2} - H = 0.00000$

$N_1{}^{-3} - I = 0.00000$

$N_1{}^{-4} - J = 0.00000$



$\frac{\sqrt{N_1}}{\sqrt{N_2}} = 1.23112$

$N_1 = 3.18458$

$N_2 = 2.10112$

$A = 1.23112$

$B = 1.51566$

$C = 1.86597$

$D = 2.29723$

$E = 2.82817$

$F = 1.00000$

$G = 0.81227$

$H = 0.65978$

$I = 0.53592$

$J = 0.43531$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{1} - A = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{2} - B = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{3} - C = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{4} - D = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{5} - E = 0.00000$

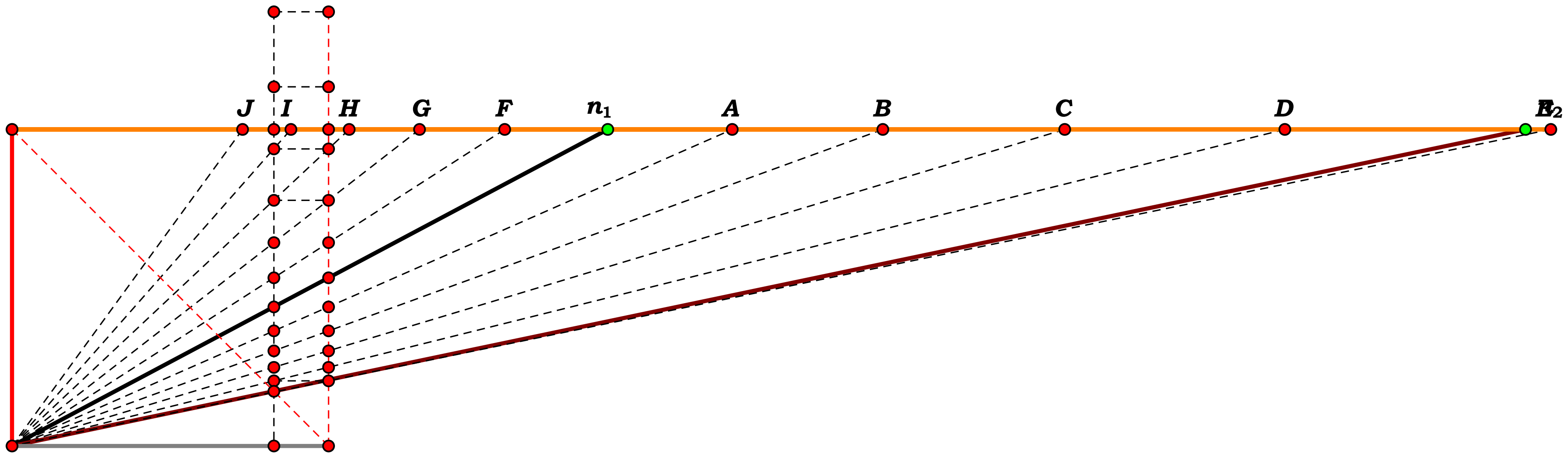
$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{0} - F = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{-1} - G = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{-2} - H = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{-3} - I = 0.00000$

$\left(\frac{\sqrt{N_1}}{\sqrt{N_2}}\right)^{-4} - J = 0.00000$



$$\frac{N_1 \cdot N_2 + N_1}{N_2} = 2.27629$$

$$\frac{N_2 + 1}{N_2} = 1.20903$$

$N_1 = 1.88273$
$N_2 = 4.78390$

$A = 2.27629$
$B = 2.75211$
$C = 3.32740$
$D = 4.02294$
$E = 4.86387$

$F = 1.55722$
$G = 1.28799$
$H = 1.06530$
$I = 0.88112$
$J = 0.72878$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{0} - A = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{1} - B = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{2} - C = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{3} - D = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{4} - E = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-1} - N_1 = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-2} - F = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-3} - G = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-4} - H = 0.00000$$

$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-5} - I = 0.00000$$

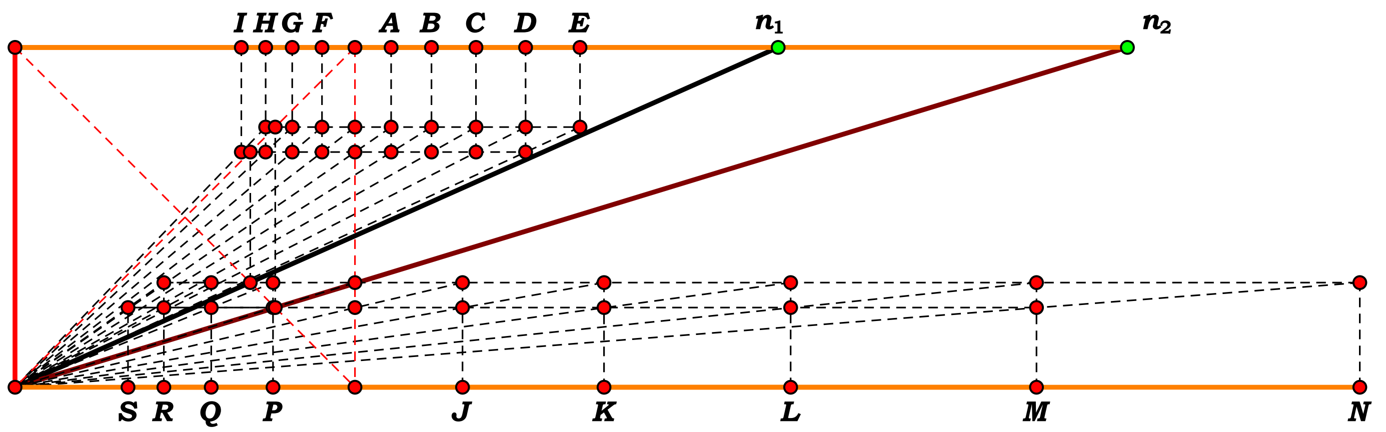
$$\frac{N_1 \cdot N_2 + N_1}{N_2} \cdot \left(\frac{N_2 + 1}{N_2}\right)^{-6} - J = 0.00000$$

$$\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)} = 1.10710$$

$A = 1.10710$
$B = 1.22567$
$C = 1.35694$
$D = 1.50227$
$E = 1.66316$
$F = 0.90326$
$G = 0.81588$
$H = 0.73695$
$I = 0.66566$

$$\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}\right)^{1} - A = 0.00000$$
$$\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}\right)^{2} - B = 0.00000$$
$$\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}\right)^{3} - C = 0.00000$$
$$\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}\right)^{4} - D = 0.00000$$
$$\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}\right)^{5} - E = 0.00000$$

$$\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}\right)^{-1} - F = 0.00000$$
$$\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}\right)^{-2} - G = 0.00000$$
$$\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}\right)^{-3} - H = 0.00000$$
$$\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot(N_2+1)}\right)^{-4} - I = 0.00000$$



$$\frac{N_2+1}{N_1+1} = 1.31677$$

$N_1 = 2.24615$
$N_2 = 3.27442$

$J = 1.31677$
$K = 1.73387$
$L = 2.28310$
$M = 3.00631$
$N = 3.95861$

$P = 0.75944$
$Q = 0.57674$
$R = 0.43800$
$S = 0.33263$

$$\left(\frac{N_2+1}{N_1+1}\right)^{1} - J = 0.00000$$
$$\left(\frac{N_2+1}{N_1+1}\right)^{2} - K = 0.00000$$
$$\left(\frac{N_2+1}{N_1+1}\right)^{3} - L = 0.00000$$
$$\left(\frac{N_2+1}{N_1+1}\right)^{4} - M = 0.00000$$
$$\left(\frac{N_2+1}{N_1+1}\right)^{5} - N = 0.00000$$

$$\left(\frac{N_2+1}{N_1+1}\right)^{-1} - P = 0.00000$$
$$\left(\frac{N_2+1}{N_1+1}\right)^{-2} - Q = 0.00000$$
$$\left(\frac{N_2+1}{N_1+1}\right)^{-3} - R = 0.00000$$
$$\left(\frac{N_2+1}{N_1+1}\right)^{-4} - S = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2} = 0.83725$$

$$\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1} = 1.12397$$

$A = 0.83725$
$B = 0.94105$
$C = 1.05771$
$D = 1.18884$
$E = 1.33622$

$F = 0.74490$
$G = 0.66274$
$H = 0.58964$
$I = 0.52461$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^0 - A = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^1 - B = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^2 - C = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^3 - D = 0.00000$$

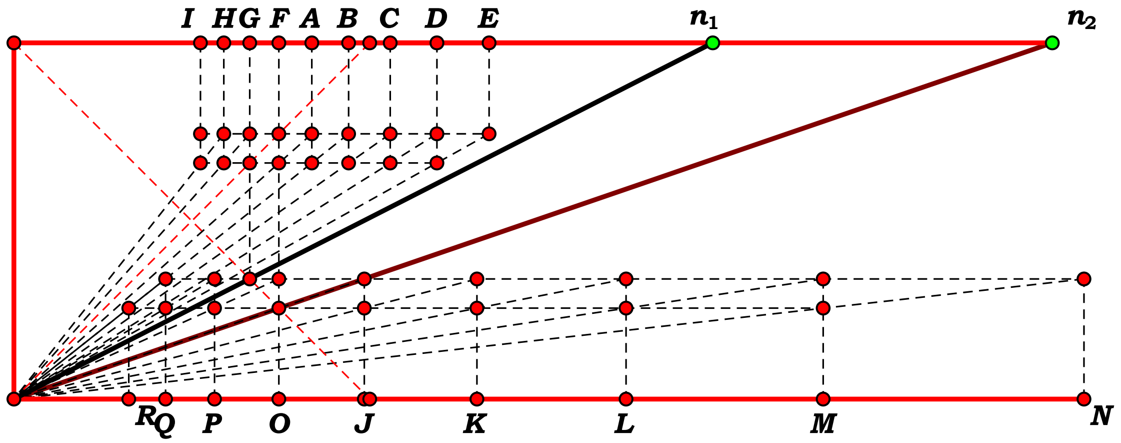
$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^4 - E = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^{-1} - F = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^{-2} - G = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^{-3} - H = 0.00000$$

$$\frac{N_2^2\cdot(N_1+1)}{N_1\cdot(N_2+1)^2}\cdot\left(\frac{N_2\cdot(N_1+1)}{N_1\cdot N_2+N_1}\right)^{-4} - I = 0.00000$$



$$\frac{N_2}{N_1+1} = 0.98482$$

$$\frac{N_2+1}{N_1+1} = 1.32208$$

$N_1 = 1.96510$
$N_2 = 2.92011$

$J = 0.98482$
$K = 1.30202$
$L = 1.72138$
$M = 2.27580$
$N = 3.00879$

$O = 0.74490$
$P = 0.56343$
$Q = 0.42617$
$R = 0.32235$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^0 - J = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^1 - K = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^2 - L = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^3 - M = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^4 - N = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^{-1} - O = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^{-2} - P = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^{-3} - Q = 0.00000$$

$$\frac{N_2}{N_1+1}\cdot\left(\frac{N_2+1}{N_1+1}\right)^{-4} - R = 0.00000$$

$B = 1.31080$
$C = 1.71820$
$D = 2.25222$
$E = 2.95221$
$F = 3.86977$
$G = 5.07250$

$$\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)} = 1.31080 \qquad \left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{1} - B = 0.00000$$

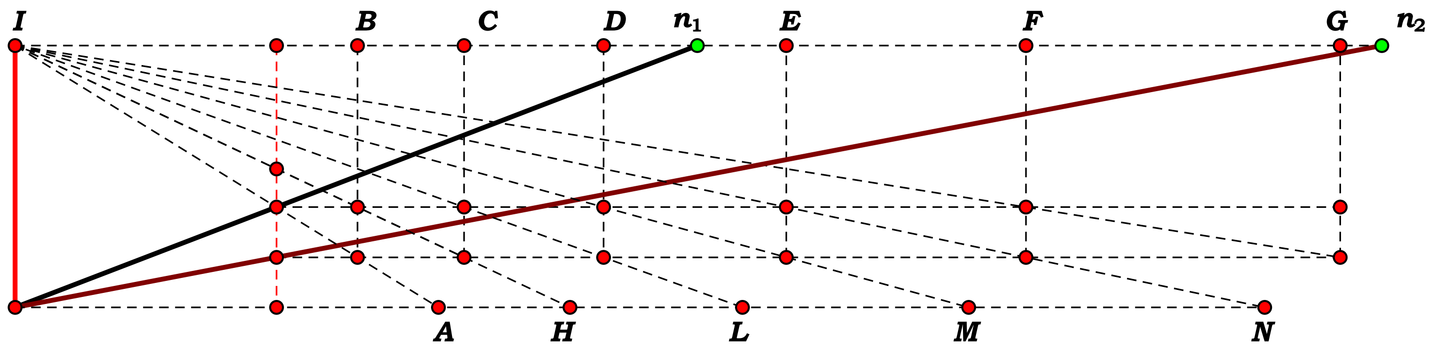
$$\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{2} = 1.71820 \qquad \left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{2} - C = 0.00000$$

$$\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{3} = 2.25222 \qquad \left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{3} - D = 0.00000$$

$$\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{4} = 2.95221 \qquad \left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{4} - E = 0.00000$$

$$\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{5} = 3.86977 \qquad \left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{5} - F = 0.00000$$

$$\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{6} = 5.07250 \qquad \left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{6} - G = 0.00000$$



$$\frac{N_1}{N_1-1} - A = 0.00000$$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2} = 2.12423$$

$N_1 = 2.61146$
$N_2 = 5.23175$

$A = 1.62056$
$H = 2.12423$
$L = 2.78444$
$M = 3.64985$
$N = 4.78423$

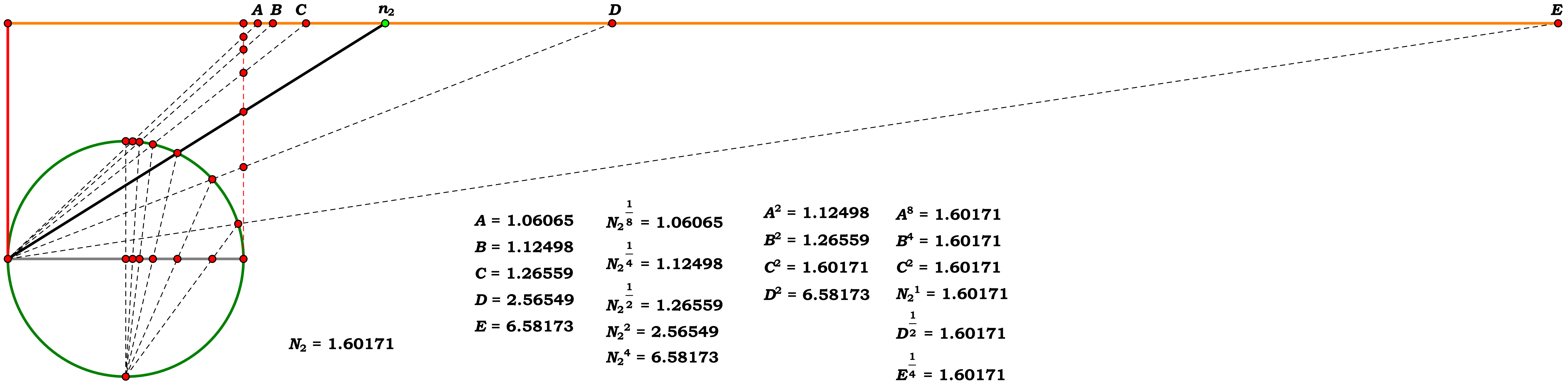
$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{-1} = 1.62056 \qquad \left(\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{-1}\right) - A = 0.00000$$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{0} = 2.12423 \qquad \left(\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{0}\right) - H = 0.00000$$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{1} = 2.78444 \qquad \left(\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{1}\right) - L = 0.00000$$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{2} = 3.64985 \qquad \left(\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{2}\right) - M = 0.00000$$

$$\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{3} = 4.78423 \qquad \left(\frac{N_1{}^2\cdot(N_2-1)}{N_2\cdot(N_1-1)^2}\cdot\left(\frac{N_1\cdot(N_2-1)}{N_2\cdot(N_1-1)}\right)^{3}\right) - N = 0.00000$$



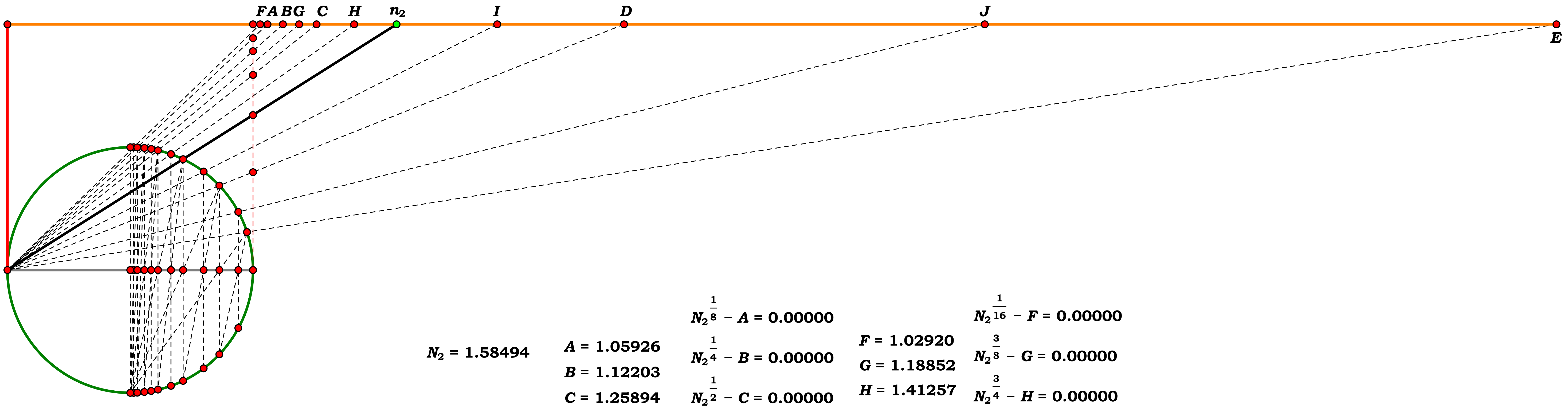
$N_2 = 1.60171$

$A = 1.06065$
$B = 1.12498$
$C = 1.26559$
$D = 2.56549$
$E = 6.58173$

$N_2^{\frac{1}{8}} = 1.06065$
$N_2^{\frac{1}{4}} = 1.12498$
$N_2^{\frac{1}{2}} = 1.26559$
$N_2^{2} = 2.56549$
$N_2^{4} = 6.58173$

$A^2 = 1.12498$
$B^2 = 1.26559$
$C^2 = 1.60171$
$D^2 = 6.58173$

$A^8 = 1.60171$
$B^4 = 1.60171$
$C^2 = 1.60171$
$N_2^{1} = 1.60171$
$D^{\frac{1}{2}} = 1.60171$
$E^{\frac{1}{4}} = 1.60171$



$N_2 = 1.58494$

$A = 1.05926$

$B = 1.12203$

$C = 1.25894$

$D = 2.51204$

$E = 6.31034$

$N_2^{\frac{1}{8}} - A = 0.00000$

$N_2^{\frac{1}{4}} - B = 0.00000$

$N_2^{\frac{1}{2}} - C = 0.00000$

$N_2^{2} - D = 0.00000$

$N_2^{4} - E = 0.00000$

$F = 1.02920$

$G = 1.18852$

$H = 1.41257$

$I = 1.99535$

$J = 3.98144$

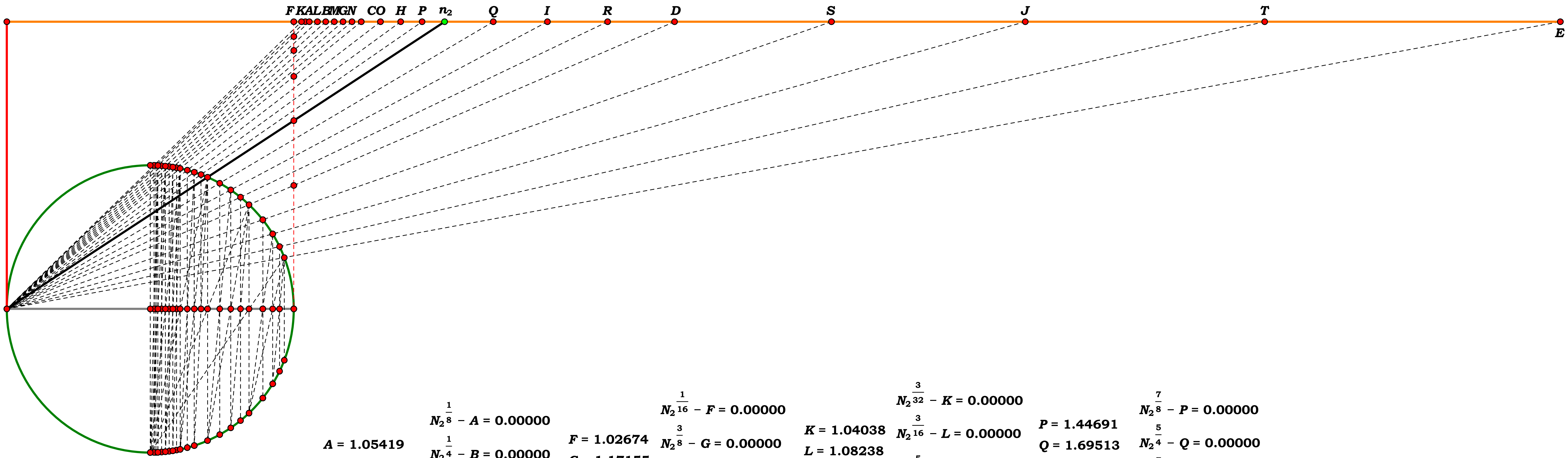
$N_2^{\frac{1}{16}} - F = 0.00000$

$N_2^{\frac{3}{8}} - G = 0.00000$

$N_2^{\frac{3}{4}} - H = 0.00000$

$N_2^{\frac{3}{2}} - I = 0.00000$

$N_2^{3} - J = 0.00000$



$N_2 = 1.52533$

$A = 1.05419$
$B = 1.11132$
$C = 1.23504$
$D = 2.32662$
$E = 5.41318$

$N_2^{\frac{1}{8}} - A = 0.00000$
$N_2^{\frac{1}{4}} - B = 0.00000$
$N_2^{\frac{1}{2}} - C = 0.00000$
$N_2^{2} - D = 0.00000$
$N_2^{4} - E = 0.00000$

$F = 1.02674$
$G = 1.17155$
$H = 1.37253$
$I = 1.88384$
$J = 3.54886$

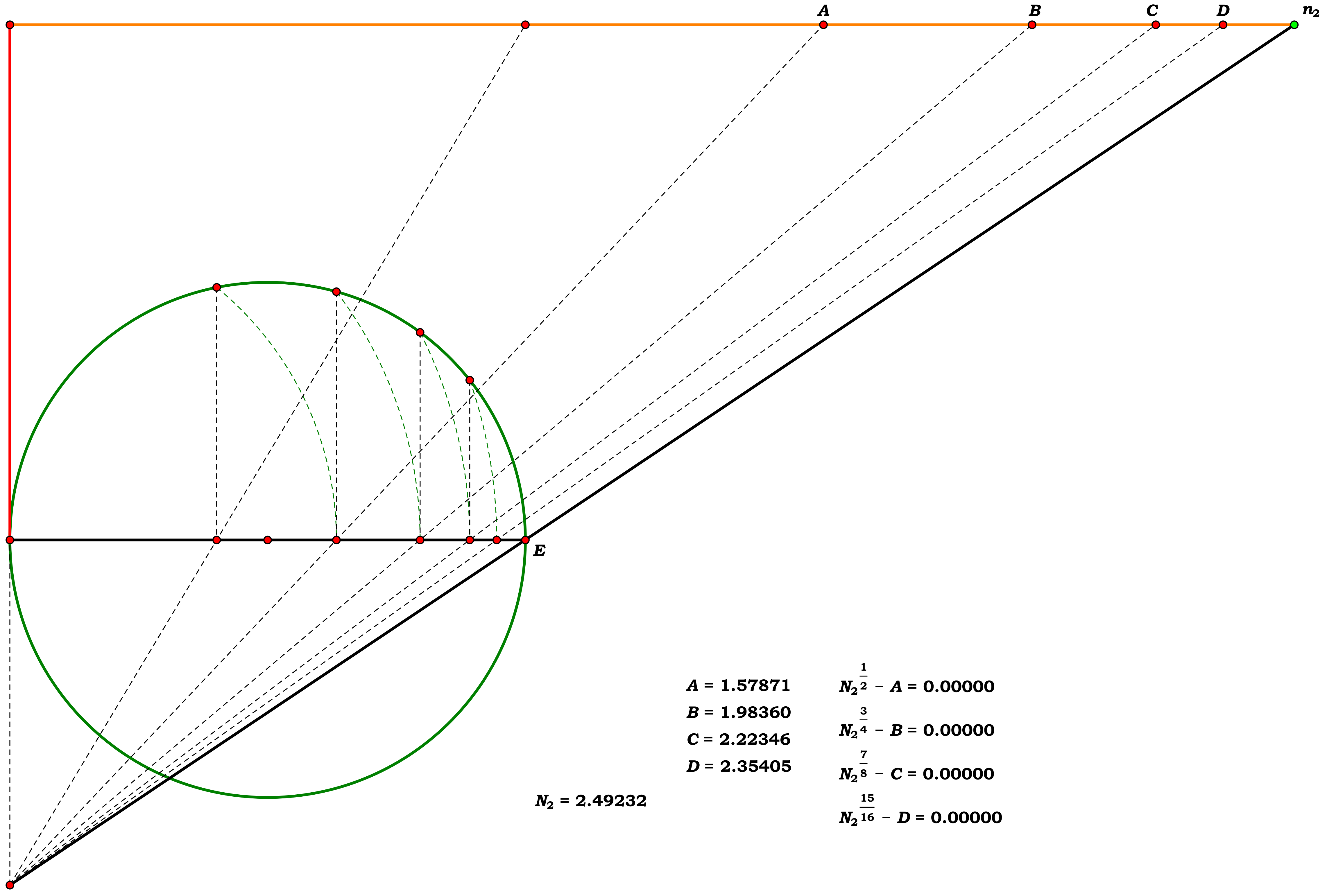
$N_2^{\frac{1}{16}} - F = 0.00000$
$N_2^{\frac{3}{8}} - G = 0.00000$
$N_2^{\frac{3}{4}} - H = 0.00000$
$N_2^{\frac{3}{2}} - I = 0.00000$
$N_2^{3} - J = 0.00000$

$K = 1.04038$
$L = 1.08238$
$M = 1.14104$
$N = 1.20288$
$O = 1.30197$

$N_2^{\frac{3}{32}} - K = 0.00000$
$N_2^{\frac{3}{16}} - L = 0.00000$
$N_2^{\frac{5}{16}} - M = 0.00000$
$N_2^{\frac{7}{16}} - N = 0.00000$
$N_2^{\frac{5}{8}} - O = 0.00000$

$P = 1.44691$
$Q = 1.69513$
$R = 2.09356$
$S = 2.87348$
$T = 4.38299$

$N_2^{\frac{7}{8}} - P = 0.00000$
$N_2^{\frac{5}{4}} - Q = 0.00000$
$N_2^{\frac{7}{4}} - R = 0.00000$
$N_2^{\frac{5}{2}} - S = 0.00000$
$N_2^{\frac{7}{2}} - T = 0.00000$



$A = 1.57871$

$B = 1.98360$

$C = 2.22346$

$D = 2.35405$

$N_2 = 2.49232$

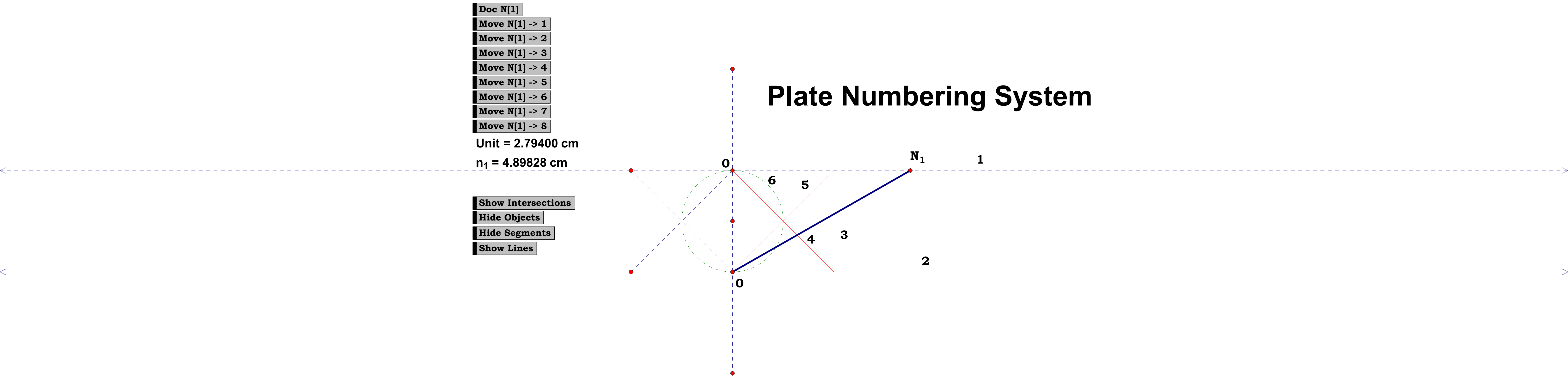
$N_2^{\frac{1}{2}} - A = 0.00000$

$N_2^{\frac{3}{4}} - B = 0.00000$

$N_2^{\frac{7}{8}} - C = 0.00000$

$N_2^{\frac{15}{16}} - D = 0.00000$

Plate Numbering System



Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.81517 cm

n_1 = 4.35225 cm

Hide Intersections

Hide Objects

Hide Segments

Show Lines

Exponential Series

$0R_1$ = 3.80985 cm

R_1 = 1.35333

N_1 = 1.54600

$\frac{1}{\sqrt{N_1-1}}-R_1 = 0.00000$

$\frac{1}{\sqrt{N_1-1}}^{-3}-R_{-3} = 0.00000$

$\frac{1}{\sqrt{N_1-1}}^{-2}-R_{-2} = 0.00000$

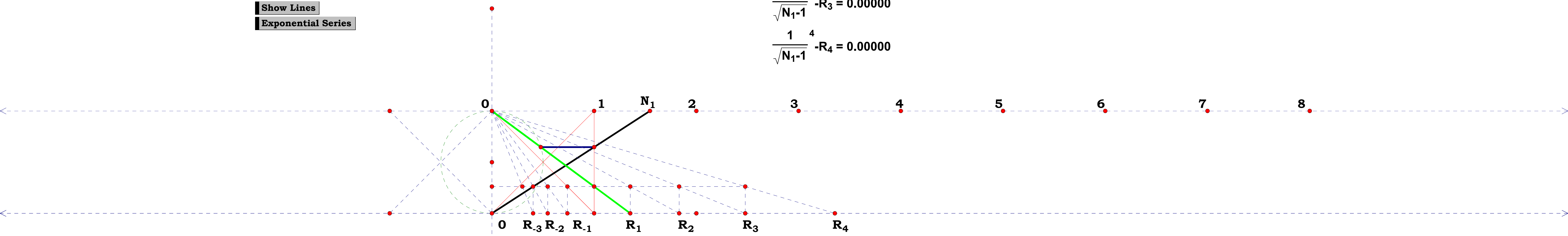
$\frac{1}{\sqrt{N_1-1}}^{-1}-R_{-1} = 0.00000$

$\frac{1}{\sqrt{N_1-1}}^{1}-R_{1} = 0.00000$

$\frac{1}{\sqrt{N_1-1}}^{2}-R_{2} = 0.00000$

$\frac{1}{\sqrt{N_1-1}}^{3}-R_{3} = 0.00000$

$\frac{1}{\sqrt{N_1-1}}^{4}-R_{4} = 0.00000$



$\frac{R_{-2}}{R_{-3}} = 1.35333$

$\frac{1}{\sqrt{N_1-1}} = 1.35333$

R_{-3} = 0.40345

R_{-2} = 0.54600

R_{-1} = 0.73892

R_2 = 1.83150

R_3 = 2.47863

R_4 = 3.35441

$0R_{-3}$ = 1.13577 cm

$0R_{-2}$ = 1.53708 cm

$0R_{-1}$ = 2.08018 cm

$0R_2$ = 5.15599 cm

$0R_3$ = 6.97776 cm

$0R_4$ = 9.44322 cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 4.19100 cm

n_1 = 6.96574 cm

Hide Intersections

Hide Segments

Show Lines

Hide Objects

$0R_1$ = 2.05173 cm

R_1 = 0.48956

N_1 = 1.66207

$\frac{\sqrt{N_1-1}}{N_1}-R_1 = 0.00000$

$\frac{\sqrt{N_1-1}^{4}}{N_1}-R_4 = 0.00000$

$\frac{\sqrt{N_1-1}^{3}}{N_1}-R_3 = 0.00000$

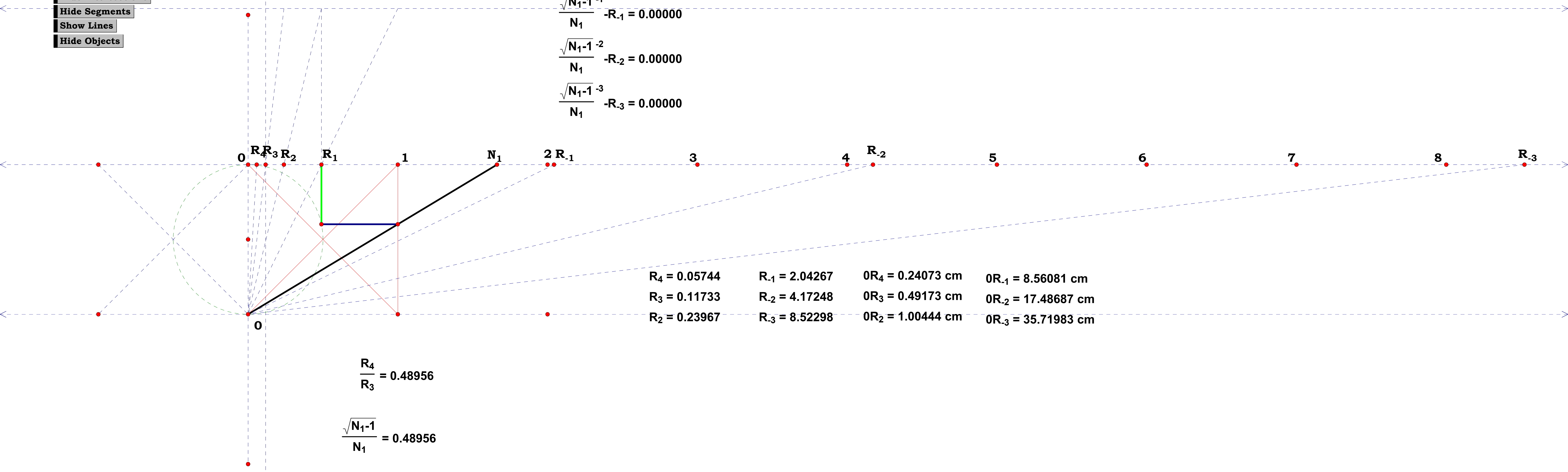
$\frac{\sqrt{N_1-1}^{2}}{N_1}-R_2 = 0.00000$

$\frac{\sqrt{N_1-1}^{1}}{N_1}-R_1 = 0.00000$

$\frac{\sqrt{N_1-1}^{-1}}{N_1}-R_{-1} = 0.00000$

$\frac{\sqrt{N_1-1}^{-2}}{N_1}-R_{-2} = 0.00000$

$\frac{\sqrt{N_1-1}^{-3}}{N_1}-R_{-3} = 0.00000$



R_4 = 0.05744

R_3 = 0.11733

R_2 = 0.23967

R_{-1} = 2.04267

R_{-2} = 4.17248

R_{-3} = 8.52298

$0R_4$ = 0.24073 cm

$0R_3$ = 0.49173 cm

$0R_2$ = 1.00444 cm

$0R_{-1}$ = 8.56081 cm

$0R_{-2}$ = 17.48687 cm

$0R_{-3}$ = 35.71983 cm

$\frac{R_4}{R_3} = 0.48956$

$\frac{\sqrt{N_1-1}}{N_1} = 0.48956$

Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.83633 cm

$n_1 = 5.78917$ cm

Hide Intersections
Show Lines
Hide Objects
Exponential Series

$0R_1 = 4.05216$ cm

$R_1 = 1.42866$

$N_1 = 2.04108$

$\sqrt{N_1}-R_1 = 0.00000$

$\sqrt{N_1^{-3}}-R_{-3} = 0.00000$

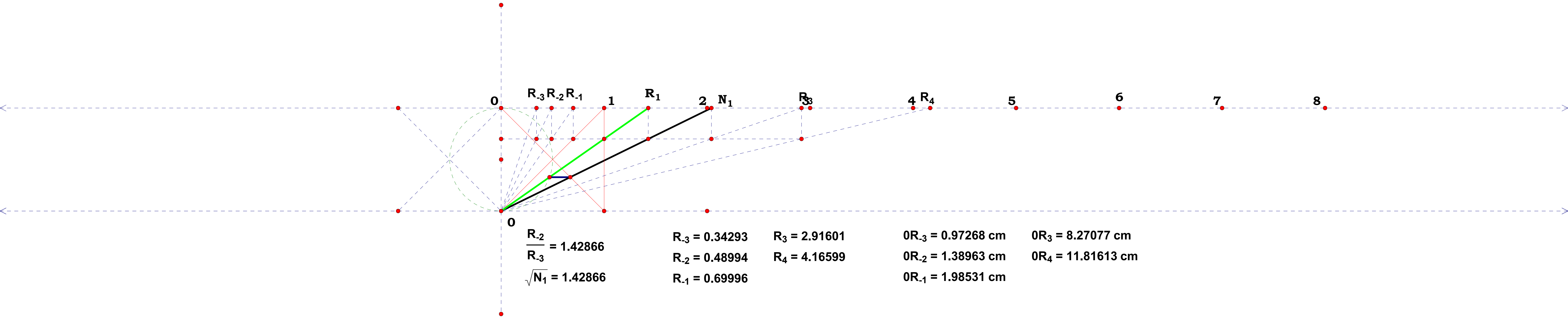
$\sqrt{N_1^{-2}}-R_{-2} = 0.00000$

$\sqrt{N_1^{-1}}-R_{-1} = 0.00000$

$\sqrt{N_1^{2}}-N_1 = 0.00000$

$\sqrt{N_1^{3}}-R_3 = 0.00000$

$\sqrt{N_1^{4}}-R_4 = 0.00000$



$\frac{R_{-2}}{R_{-3}} = 1.42866$

$\sqrt{N_1} = 1.42866$

$R_{-3} = 0.34293$

$R_{-2} = 0.48994$

$R_{-1} = 0.69996$

$R_3 = 2.91601$

$R_4 = 4.16599$

$0R_{-3} = 0.97268$ cm

$0R_{-2} = 1.38963$ cm

$0R_{-1} = 1.98531$ cm

$0R_3 = 8.27077$ cm

$0R_4 = 11.81613$ cm

Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.79400 cm

$n_1 = 1.79607$ cm

Hide Intersections
Show Lines
Hide Objects
Exponential Series

$0R_1 = 3.48480$ cm

$R_1 = 1.24724$

$N_1 = 0.64283$

$$\frac{1}{\sqrt{N_1}} - R_1 = 0.00000$$

$$\left(\frac{1}{\sqrt{N_1}}\right)^{-3} - R_{-3} = 0.00000$$

$$\left(\frac{1}{\sqrt{N_1}}\right)^{-2} - R_{-2} = 0.00000$$

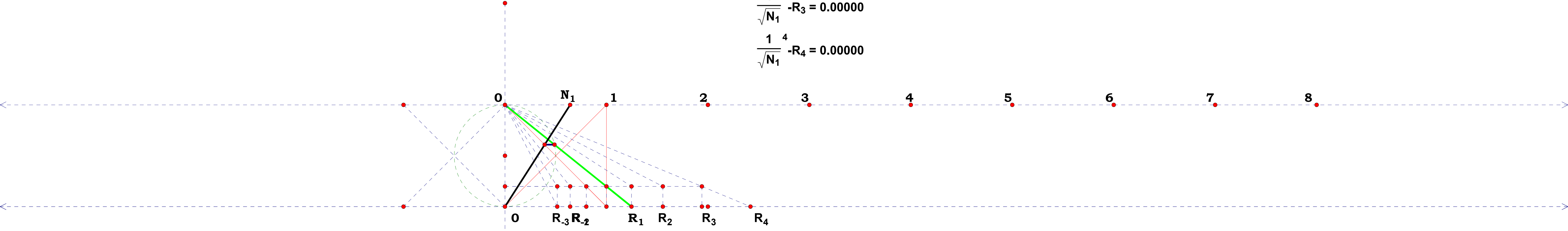
$$\left(\frac{1}{\sqrt{N_1}}\right)^{-1} - R_{-1} = 0.00000$$

$$\left(\frac{1}{\sqrt{N_1}}\right)^{1} - R_1 = 0.00000$$

$$\left(\frac{1}{\sqrt{N_1}}\right)^{2} - R_2 = 0.00000$$

$$\left(\frac{1}{\sqrt{N_1}}\right)^{3} - R_3 = 0.00000$$

$$\left(\frac{1}{\sqrt{N_1}}\right)^{4} - R_4 = 0.00000$$



$$\frac{R_{-2}}{R_{-3}} = 1.24724$$

$$\frac{1}{\sqrt{N_1}} = 1.24724$$

$R_{-3} = 0.51540$

$R_{-2} = 0.64283$

$R_{-1} = 0.80177$

$R_2 = 1.55562$

$R_3 = 1.94024$

$R_4 = 2.41995$

$0R_{-3} = 1.44003$ cm

$0R_{-2} = 1.79607$ cm

$0R_{-1} = 2.24014$ cm

$0R_2 = 4.34640$ cm

$0R_3 = 5.42103$ cm

$0R_4 = 6.76135$ cm

Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.79400 cm

n_1 = 4.29683 cm

Hide Intersections
Show Lines
Hide Segments
Show Objects
Hide Objects
Exponential Series

$0R_1$ = 1.36526 cm

$R_1 = 0.48864$

$N_1 = 1.53788$

$\frac{\sqrt{N_1}}{N_1+1}-R_1 = 0.00000$

$\frac{\sqrt{N_1}}{N_1+1}^{4}-R_4 = 0.00000$

$\frac{\sqrt{N_1}}{N_1+1}^{3}-R_3 = 0.00000$

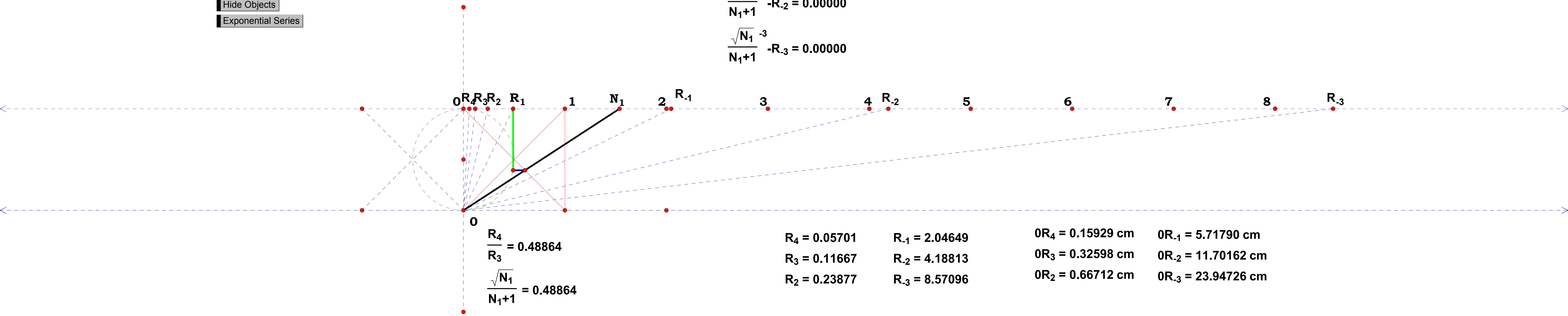
$\frac{\sqrt{N_1}}{N_1+1}^{2}-R_2 = 0.00000$

$\frac{\sqrt{N_1}}{N_1+1}^{1}-R_1 = 0.00000$

$\frac{\sqrt{N_1}}{N_1+1}^{-1}-R_{-1} = 0.00000$

$\frac{\sqrt{N_1}}{N_1+1}^{-2}-R_{-2} = 0.00000$

$\frac{\sqrt{N_1}}{N_1+1}^{-3}-R_{-3} = 0.00000$



$\frac{R_4}{R_3} = 0.48864$

$\frac{\sqrt{N_1}}{N_1+1} = 0.48864$

$R_4 = 0.05701$
$R_3 = 0.11667$
$R_2 = 0.23877$

$R_{-1} = 2.04649$
$R_{-2} = 4.18813$
$R_{-3} = 8.57096$

$0R_4$ = 0.15929 cm
$0R_3$ = 0.32598 cm
$0R_2$ = 0.66712 cm

$0R_{-1}$ = 5.71790 cm
$0R_{-2}$ = 11.70162 cm
$0R_{-3}$ = 23.94726 cm

Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.77283 cm

n_1 = 2.12407 cm

Hide Intersections
Hide Objects
Show Lines
Exponential Series

$0R_1$ = 3.61976 cm

R_1 = 1.30544

N_1 = 0.76603

$\frac{1}{N_1} - R_1 = 0.00000$

$\frac{1}{N_1}^{-3} - R_{-3} = 0.00000$

$\frac{1}{N_1}^{-2} - R_{-2} = 0.00000$

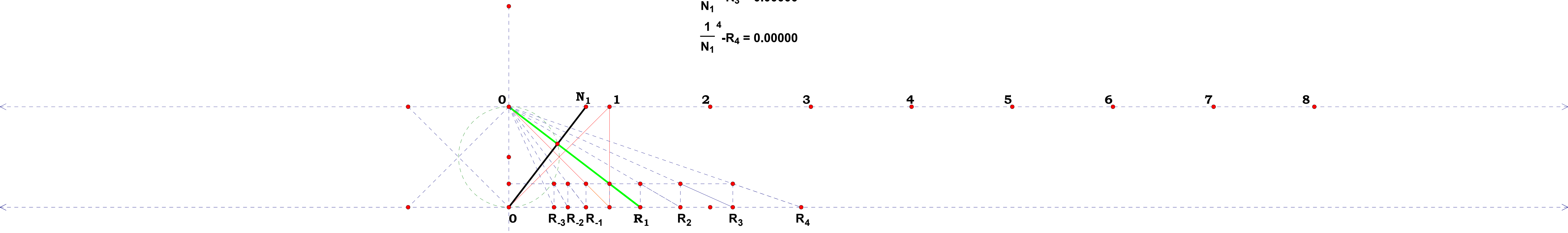
$\frac{1}{N_1}^{-1} - R_{-1} = 0.00000$

$\frac{1}{N_1}^{1} - R_1 = 0.00000$

$\frac{1}{N_1}^{2} - R_2 = 0.00000$

$\frac{1}{N_1}^{3} - R_3 = 0.00000$

$\frac{1}{N_1}^{4} - R_4 = 0.00000$



$\frac{R_{-2}}{R_{-3}} = 1.30544$

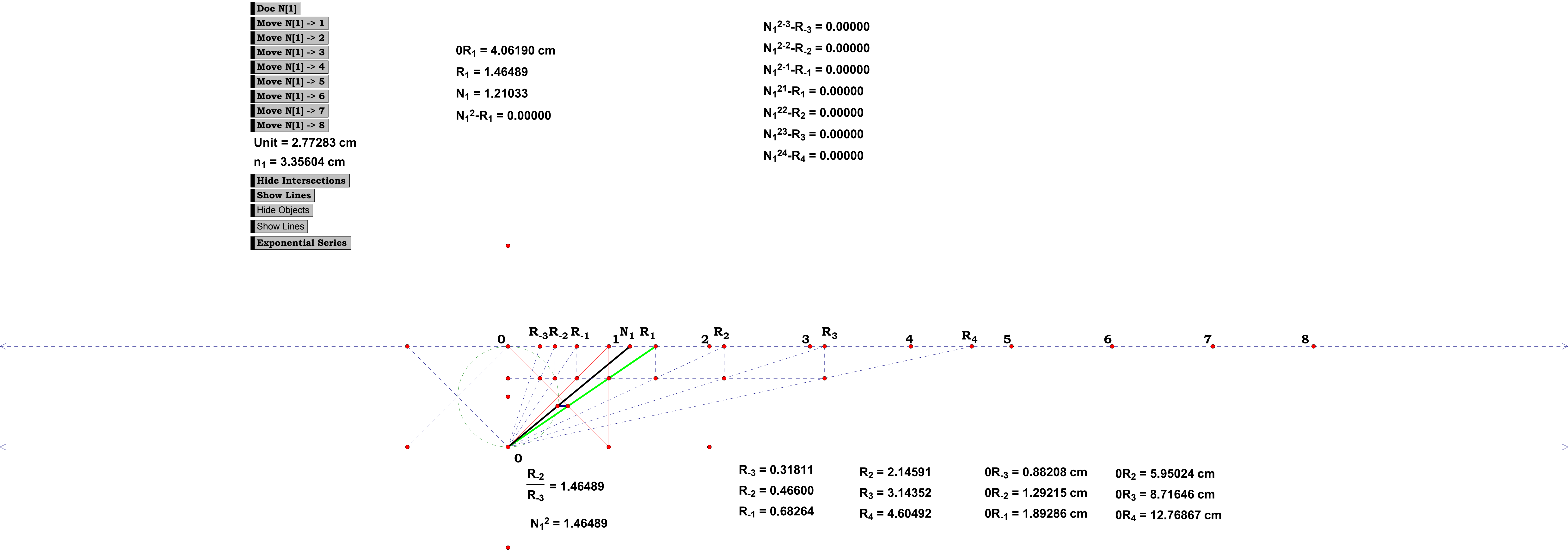
$\frac{1}{N_1} = 1.30544$

R_{-3} = 0.44950
R_{-2} = 0.58680
R_{-1} = 0.76603

R_2 = 1.70416
R_3 = 2.22468
R_4 = 2.90417

$0R_{-3}$ = 1.24640 cm
$0R_{-2}$ = 1.62709 cm
$0R_{-1}$ = 2.12407 cm

$0R_2$ = 4.72536 cm
$0R_3$ = 6.16866 cm
$0R_4$ = 8.05279 cm



Unit = 2.77283 cm

n_1 = 3.35604 cm

$0R_1$ = 4.06190 cm

R_1 = 1.46489

N_1 = 1.21033

$N_1^2 - R_1$ = 0.00000

$N_1^{2\text{-}3} - R_{-3}$ = 0.00000

$N_1^{2\text{-}2} - R_{-2}$ = 0.00000

$N_1^{2\text{-}1} - R_{-1}$ = 0.00000

$N_1^{21} - R_1$ = 0.00000

$N_1^{22} - R_2$ = 0.00000

$N_1^{23} - R_3$ = 0.00000

$N_1^{24} - R_4$ = 0.00000

$\frac{R_{-2}}{R_{-3}}$ = 1.46489

N_1^2 = 1.46489

R_{-3} = 0.31811

R_{-2} = 0.46600

R_{-1} = 0.68264

R_2 = 2.14591

R_3 = 3.14352

R_4 = 4.60492

$0R_{-3}$ = 0.88208 cm

$0R_{-2}$ = 1.29215 cm

$0R_{-1}$ = 1.89286 cm

$0R_2$ = 5.95024 cm

$0R_3$ = 8.71646 cm

$0R_4$ = 12.76867 cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.77283 cm

n_1 = 4.23333 cm

Hide Intersections

Show Lines

Hide Segments

Base Figure

Exponential Series

$0R_1$ = 1.94037 cm

R_1 = 0.69978

N_1 = 1.52672

$\frac{N_1^2}{N_1^2+1} - R_1 = 0.00000$

${\frac{N_1^2}{N_1^2+1}}^{4} - R_4 = 0.00000$

${\frac{N_1^2}{N_1^2+1}}^{3} - R_3 = 0.00000$

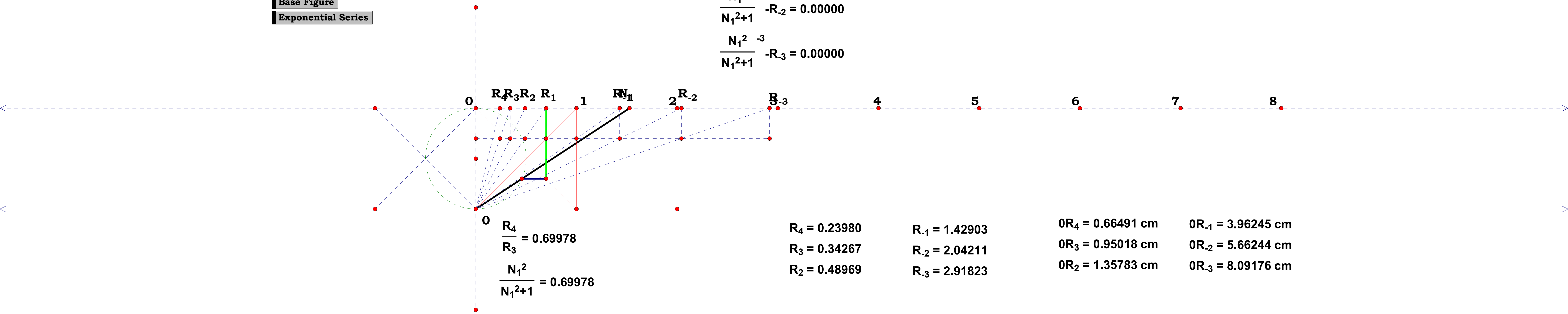
${\frac{N_1^2}{N_1^2+1}}^{2} - R_2 = 0.00000$

${\frac{N_1^2}{N_1^2+1}}^{1} - R_1 = 0.00000$

${\frac{N_1^2}{N_1^2+1}}^{-1} - R_{-1} = 0.00000$

${\frac{N_1^2}{N_1^2+1}}^{-2} - R_{-2} = 0.00000$

${\frac{N_1^2}{N_1^2+1}}^{-3} - R_{-3} = 0.00000$



$\frac{R_4}{R_3} = 0.69978$

$\frac{N_1^2}{N_1^2+1} = 0.69978$

R_4 = 0.23980

R_3 = 0.34267

R_2 = 0.48969

R_{-1} = 1.42903

R_{-2} = 2.04211

R_{-3} = 2.91823

$0R_4$ = 0.66491 cm

$0R_3$ = 0.95018 cm

$0R_2$ = 1.35783 cm

$0R_{-1}$ = 3.96245 cm

$0R_{-2}$ = 5.66244 cm

$0R_{-3}$ = 8.09176 cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.77283 cm

n_1 = 2.05317 cm

Hide Intersections

Show Lines

Hide Segments

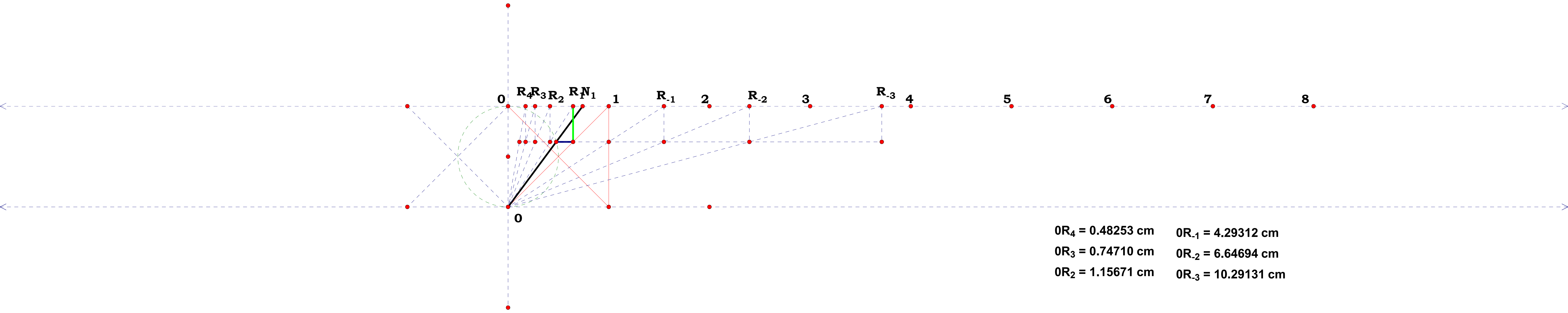
Base Figure

$0R_1$ = 1.79091 cm

R_1 = 0.64588

N_1 = 0.74046

$$\frac{1}{N_1^2+1} - R_1 = 0.00000$$



$0R_4$ = 0.48253 cm

$0R_3$ = 0.74710 cm

$0R_2$ = 1.15671 cm

$0R_{-1}$ = 4.29312 cm

$0R_{-2}$ = 6.64694 cm

$0R_{-3}$ = 10.29131 cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.79400 cm

n_1 = 2.25657 cm

Hide Intersections

Show Lines

Hide Objects

Exponential Series

$0R_1$ = 4.61652 cm

R_1 = 1.65230

N_1 = 0.80765

$(N_1^2+1)-R_1$ = 0.00000

$(N_1^2+1)^{-3}-R_{-3}$ = 0.00000

$(N_1^2+1)^{-2}-R_{-2}$ = 0.00000

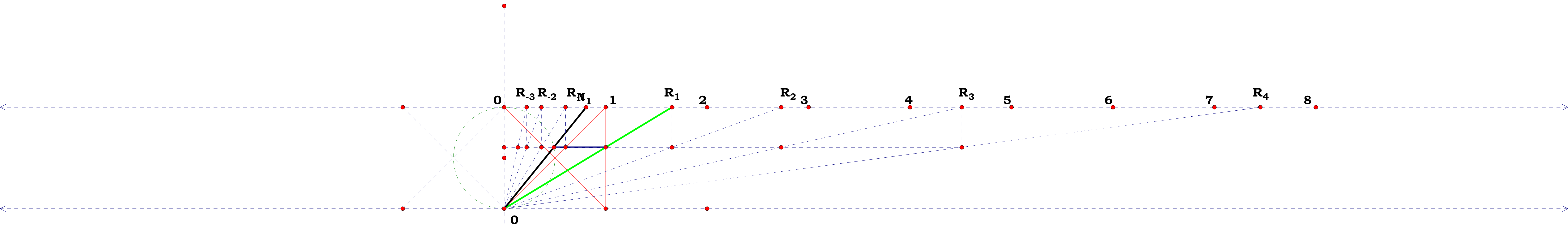
$(N_1^2+1)^{-1}-R_{-1}$ = 0.00000

$(N_1^2+1)^{1}-R_1$ = 0.00000

$(N_1^2+1)^{2}-R_2$ = 0.00000

$(N_1^2+1)^{3}-R_3$ = 0.00000

$(N_1^2+1)^{4}-R_4$ = 0.00000



$\frac{R_{-2}}{R_{-3}}$ = 1.65230

N_1^2+1 = 1.65230

R_{-3} = 0.22168

R_{-2} = 0.36629

R_{-1} = 0.60522

R_2 = 2.73009

R_3 = 4.51092

R_4 = 7.45338

$0R_{-3}$ = 0.61939 cm

$0R_{-2}$ = 1.02341 cm

$0R_{-1}$ = 1.69098 cm

$0R_2$ = 7.62787 cm

$0R_3$ = 12.60351 cm

$0R_4$ = 20.82475 cm

Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.79400 cm

$n_1 = 3.55600$ cm

Hide Intersections
Show Lines
Base Figure
Hide Segments
Exponential Series

$0R_1 = 4.51887$ cm

$R_1 = 1.61735$

$N_1 = 1.27273$

$\frac{N_1^2+1}{N_1^2} - R_1 = 0.00000$

${\frac{N_1^2+1}{N_1^2}}^{-3} - R_{-3} = 0.00000$

${\frac{N_1^2+1}{N_1^2}}^{-2} - R_{-2} = 0.00000$

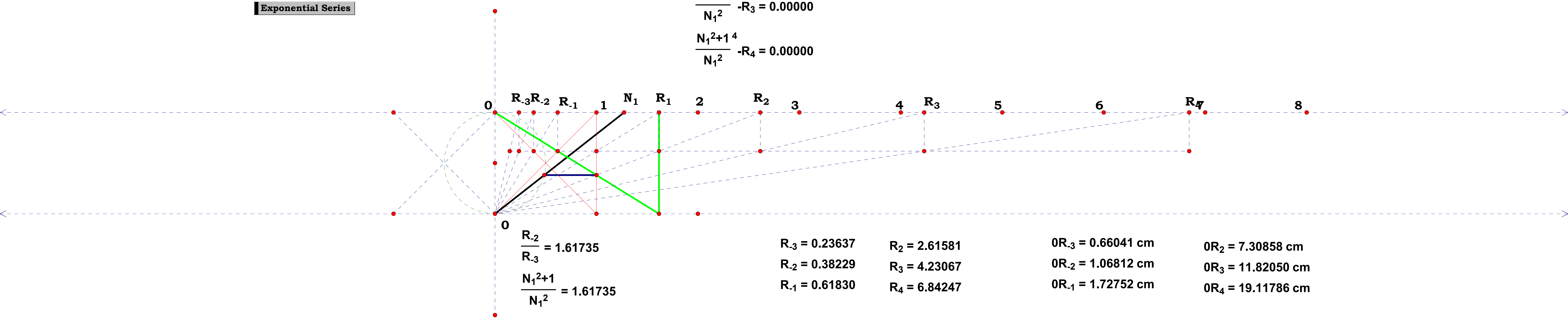
${\frac{N_1^2+1}{N_1^2}}^{-1} - R_{-1} = 0.00000$

${\frac{N_1^2+1}{N_1^2}}^{1} - R_1 = 0.00000$

${\frac{N_1^2+1}{N_1^2}}^{2} - R_2 = 0.00000$

${\frac{N_1^2+1}{N_1^2}}^{3} - R_3 = 0.00000$

${\frac{N_1^2+1}{N_1^2}}^{4} - R_4 = 0.00000$



$\frac{R_{-2}}{R_{-3}} = 1.61735$

$\frac{N_1^2+1}{N_1^2} = 1.61735$

$R_{-3} = 0.23637$
$R_{-2} = 0.38229$
$R_{-1} = 0.61830$

$R_2 = 2.61581$
$R_3 = 4.23067$
$R_4 = 6.84247$

$0R_{-3} = 0.66041$ cm
$0R_{-2} = 1.06812$ cm
$0R_{-1} = 1.72752$ cm

$0R_2 = 7.30858$ cm
$0R_3 = 11.82050$ cm
$0R_4 = 19.11786$ cm

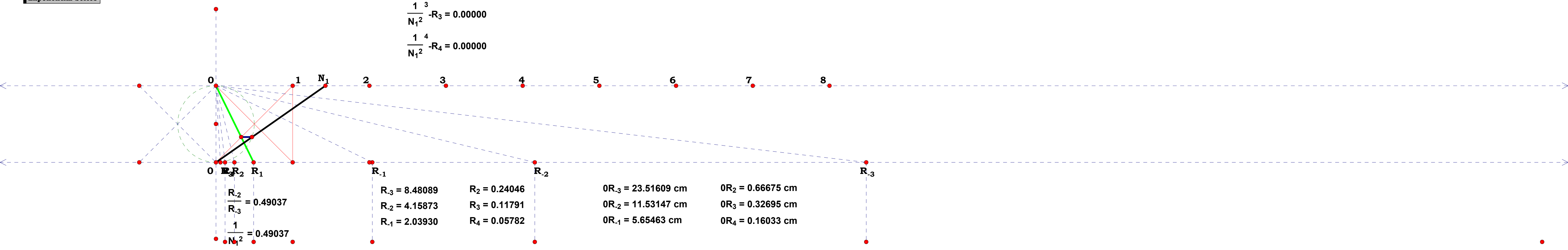
Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.77283 cm
n_1 = 3.95972 cm

Hide Intersections
Show Lines
Hide Objects
Exponential Series

$0R_1$ = 1.35970 cm
R_1 = 0.49037
N_1 = 1.42804
$\frac{1}{N_1^2} - R_1 = 0.00000$

$\frac{1}{N_1^2}^{-3} - R_{-3} = 0.00000$
$\frac{1}{N_1^2}^{-2} - R_{-2} = 0.00000$
$\frac{1}{N_1^2}^{-1} - R_{-1} = 0.00000$
$\frac{1}{N_1^2}^{1} - R_{1} = 0.00000$
$\frac{1}{N_1^2}^{2} - R_{2} = 0.00000$
$\frac{1}{N_1^2}^{3} - R_{3} = 0.00000$
$\frac{1}{N_1^2}^{4} - R_{4} = 0.00000$



$\frac{R_{-2}}{R_{-3}} = 0.49037$
$\frac{1}{N_1^2} = 0.49037$

R_{-3} = 8.48089
R_{-2} = 4.15873
R_{-1} = 2.03930

R_2 = 0.24046
R_3 = 0.11791
R_4 = 0.05782

$0R_{-3}$ = 23.51609 cm
$0R_{-2}$ = 11.53147 cm
$0R_{-1}$ = 5.65463 cm

$0R_2$ = 0.66675 cm
$0R_3$ = 0.32695 cm
$0R_4$ = 0.16033 cm

Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.77283 cm

n_1 = 4.00205 cm

Show Lines
Hide Segments
Base Figure
Exponential Series

$0R_1$ = 1.29805 cm

$R_1 = 0.46813$

$N_1 = 1.44331$

$\frac{N_1}{N_1^2+1}-R_1 = 0.00000$

${\frac{N_1}{N_1^2+1}}^{4}-R_4 = 0.00000$

${\frac{N_1}{N_1^2+1}}^{3}-R_3 = 0.00000$

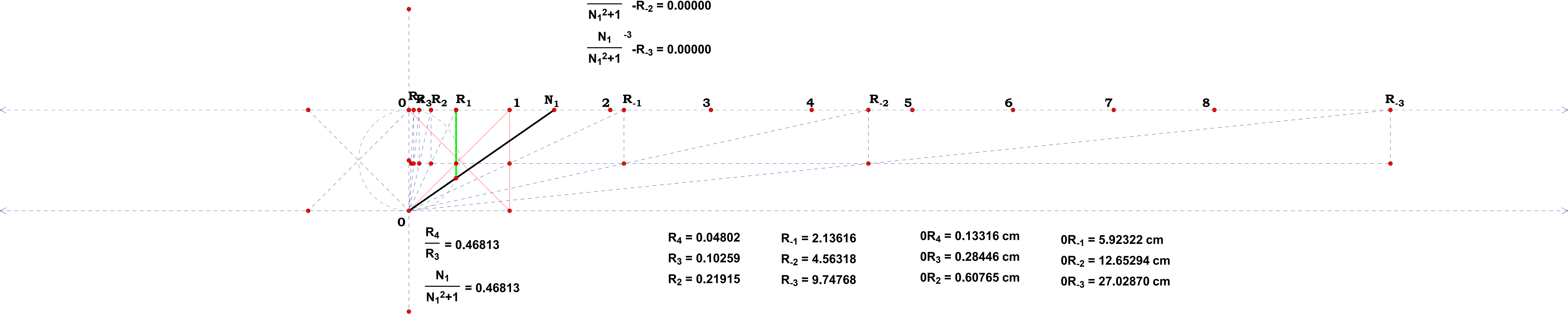
${\frac{N_1}{N_1^2+1}}^{2}-R_2 = 0.00000$

${\frac{N_1}{N_1^2+1}}^{1}-R_1 = 0.00000$

${\frac{N_1}{N_1^2+1}}^{-1}-R_{-1} = 0.00000$

${\frac{N_1}{N_1^2+1}}^{-2}-R_{-2} = 0.00000$

${\frac{N_1}{N_1^2+1}}^{-3}-R_{-3} = 0.00000$



$\frac{R_4}{R_3} = 0.46813$

$\frac{N_1}{N_1^2+1} = 0.46813$

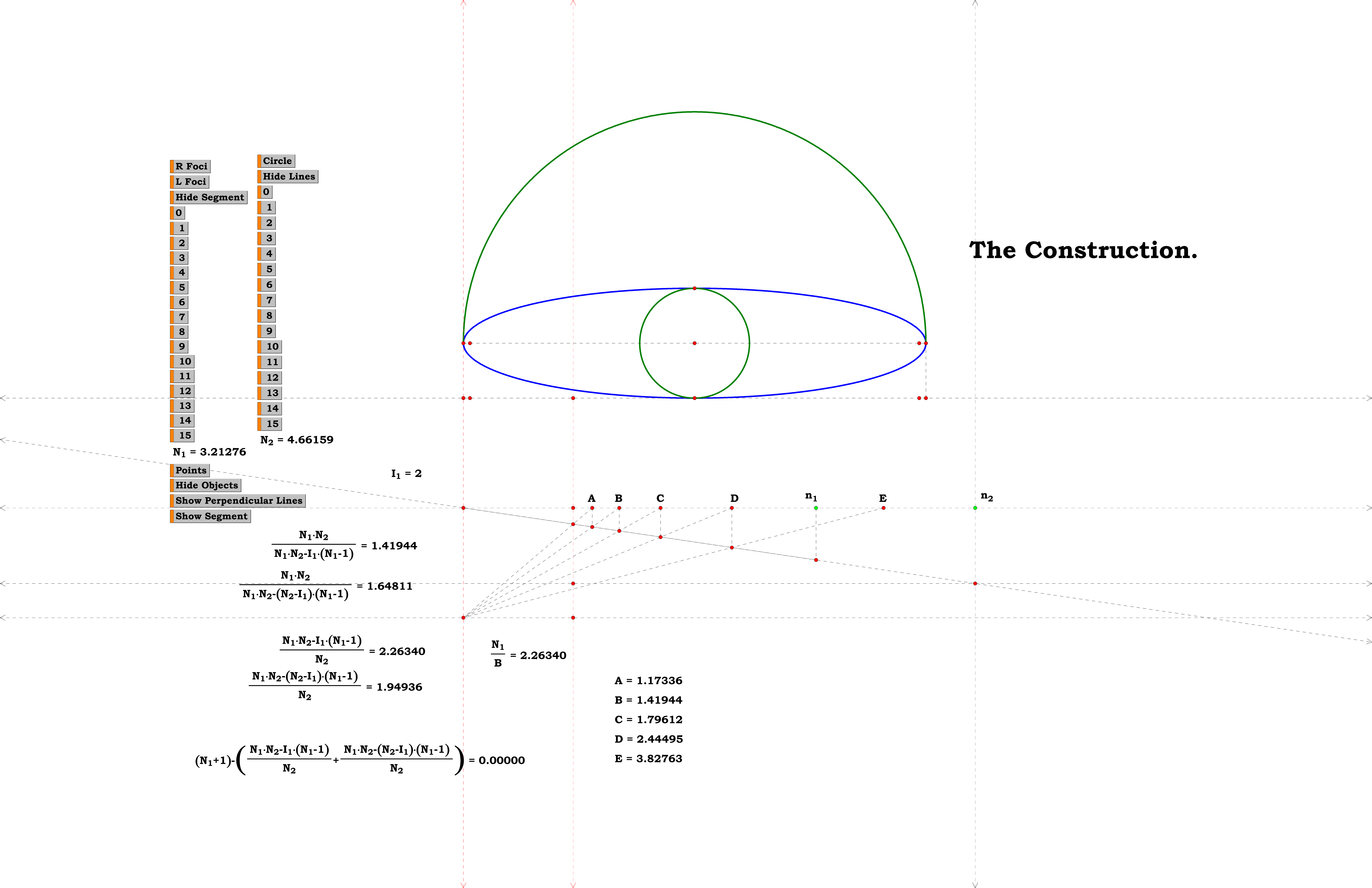
$R_4 = 0.04802$
$R_3 = 0.10259$
$R_2 = 0.21915$

$R_{-1} = 2.13616$
$R_{-2} = 4.56318$
$R_{-3} = 9.74768$

$0R_4$ = 0.13316 cm
$0R_3$ = 0.28446 cm
$0R_2$ = 0.60765 cm

$0R_{-1}$ = 5.92322 cm
$0R_{-2}$ = 12.65294 cm
$0R_{-3}$ = 27.02870 cm

The Construction.



$N_1 = 3.21276$

$N_2 = 4.66159$

$I_1 = 2$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)} = 1.41944$$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)} = 1.64811$$

$$\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} = 2.26340$$

$$\frac{N_1}{B} = 2.26340$$

$$\frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} = 1.94936$$

$$(N_1 + 1) - \left(\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} + \frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} \right) = 0.00000$$

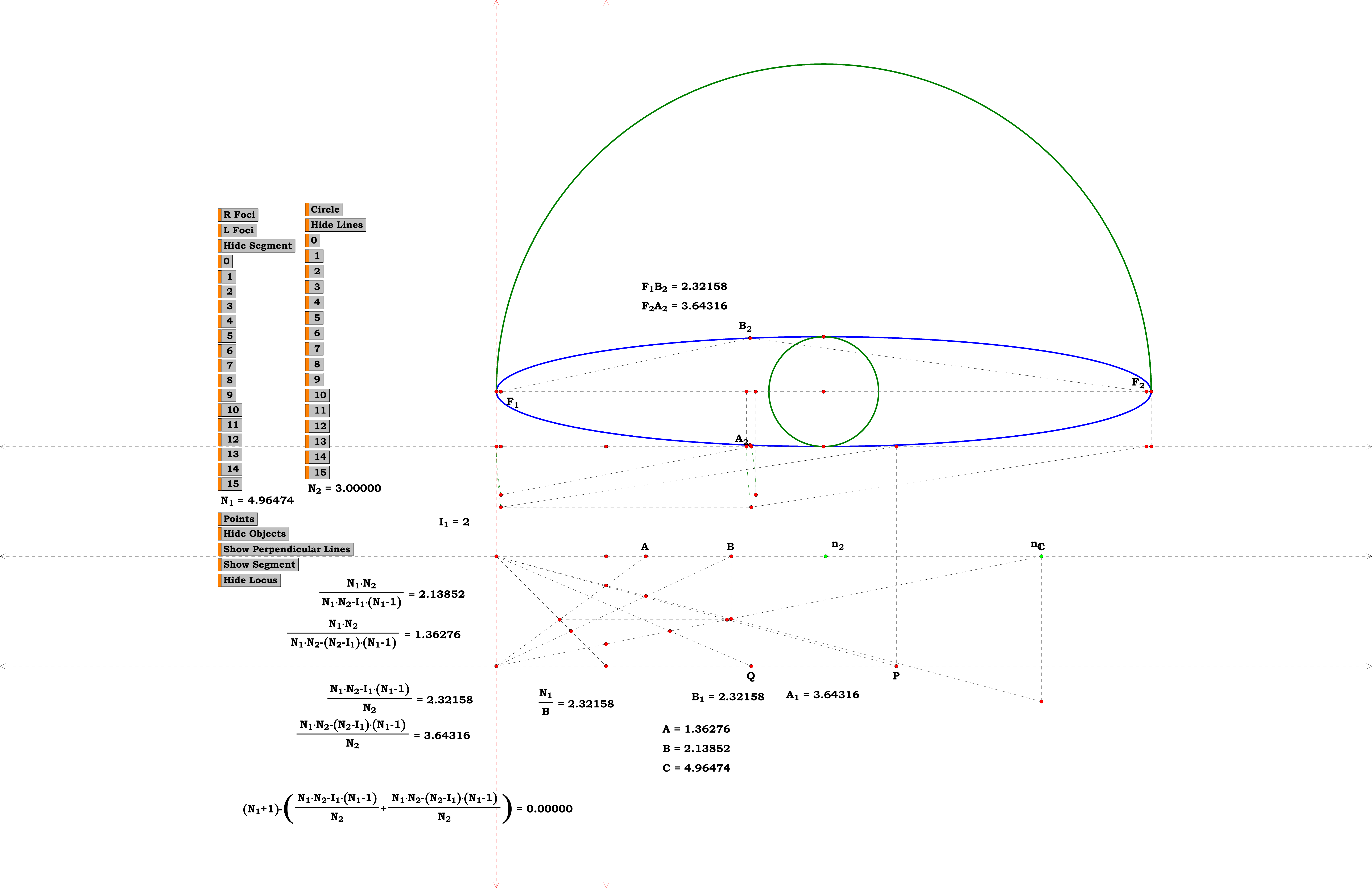
A = 1.17336

B = 1.41944

C = 1.79612

D = 2.44495

E = 3.82763



$F_1B_2 = 2.32158$

$F_2A_2 = 3.64316$

$N_1 = 4.96474$

$N_2 = 3.00000$

$I_1 = 2$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)} = 2.13852$$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)} = 1.36276$$

$$\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} = 2.32158$$

$$\frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} = 3.64316$$

$$\frac{N_1}{B} = 2.32158$$

$B_1 = 2.32158$

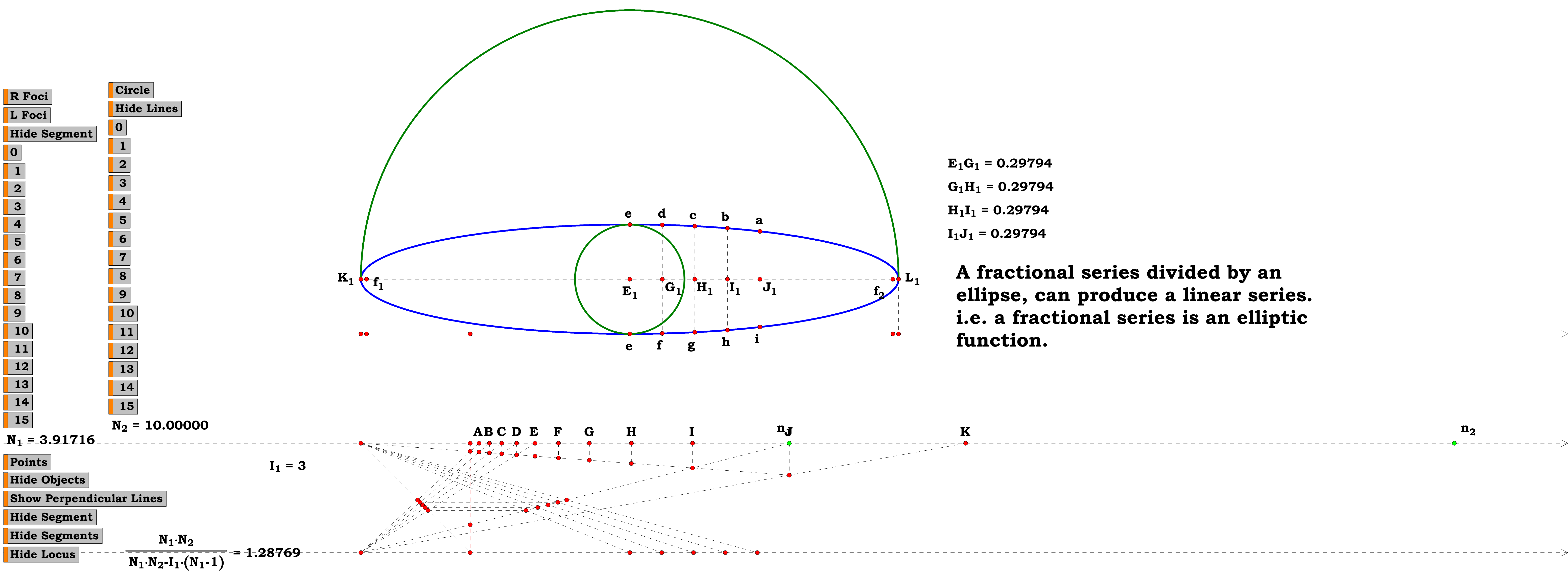
$A_1 = 3.64316$

$A = 1.36276$

$B = 2.13852$

$C = 4.96474$

$$(N_1 + 1) - \left(\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} + \frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} \right) = 0.00000$$



$E_1G_1 = 0.29794$

$G_1H_1 = 0.29794$

$H_1I_1 = 0.29794$

$I_1J_1 = 0.29794$

A fractional series divided by an ellipse, can produce a linear series. i.e. a fractional series is an elliptic function.

$N_2 = 10.00000$

$N_1 = 3.91716$

$I_1 = 3$

$$\frac{N_1\cdot N_2}{N_1\cdot N_2-I_1\cdot(N_1-1)} = 1.28769$$

$$\frac{N_1\cdot N_2}{N_1\cdot N_2-(N_2-I_1)\cdot(N_1-1)} = 2.08899$$

$$\frac{N_1\cdot N_2-I_1\cdot(N_1-1)}{N_2} = 3.04201$$

$$\frac{N_1}{B} = 3.33373$$

$$\frac{N_1\cdot N_2-(N_2-I_1)\cdot(N_1-1)}{N_2} = 1.87515$$

$$(N_1+1)-\left(\frac{N_1\cdot N_2-I_1\cdot(N_1-1)}{N_2}+\frac{N_1\cdot N_2-(N_2-I_1)\cdot(N_1-1)}{N_2}\right) = 0.00000$$

$K_1L_1 = 4.91716$

A = 1.08046
B = 1.17501
C = 1.28769
D = 1.42427
E = 1.59326

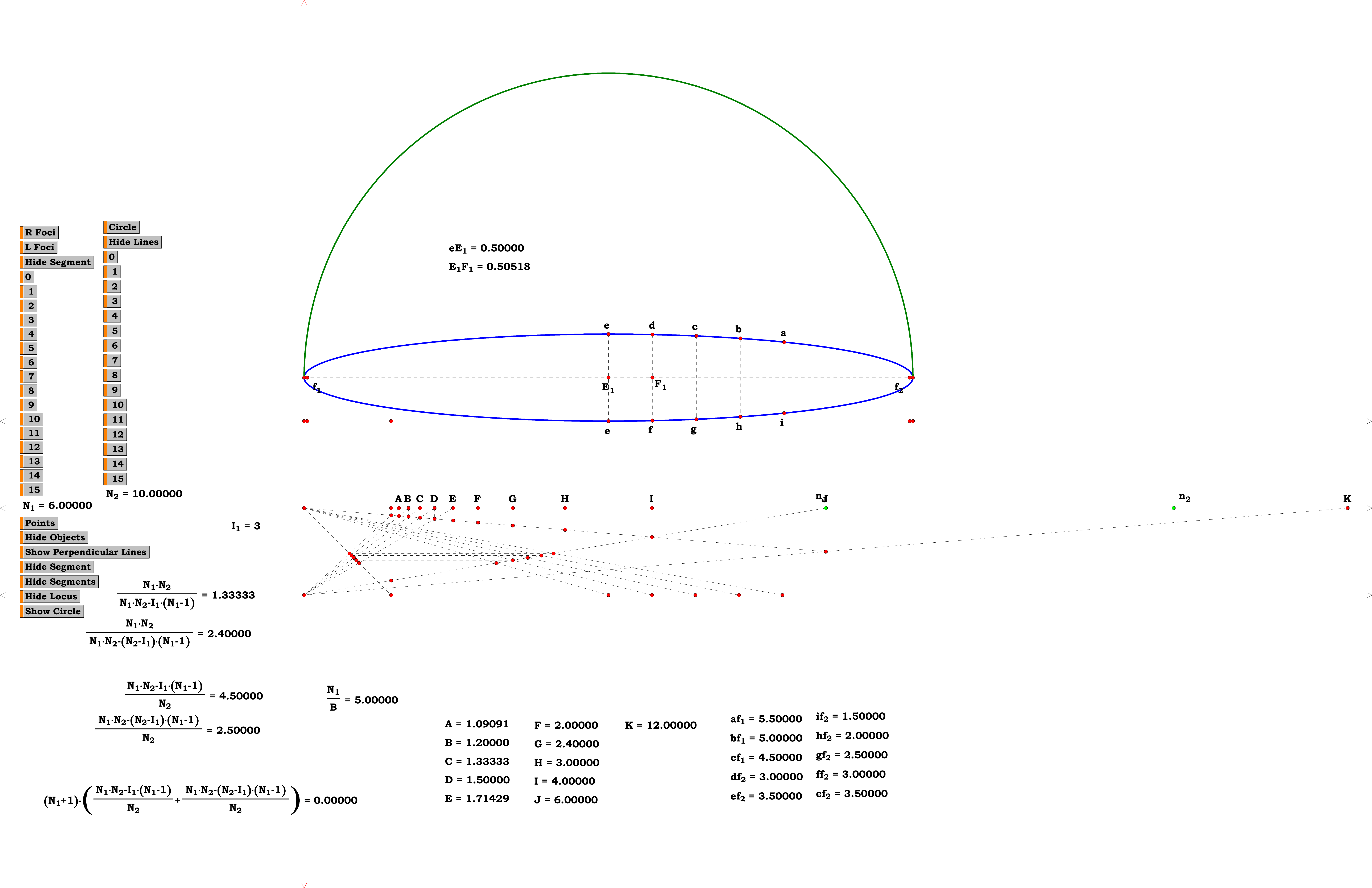
F = 1.80776
G = 2.08899
H = 2.47384
I = 3.03253
J = 3.91716

K = 5.53050

$af_1 = 3.62545$
$bf_1 = 3.33373$
$cf_1 = 3.04201$
$df_2 = 2.16687$
$ef_2 = 2.45858$

$if_2 = 1.29172$
$hf_2 = 1.58343$
$gf_2 = 1.87515$
$ff_2 = 2.16687$
$ef_2 = 2.45858$

$(af_1+if_2)-K_1L_1 = 0.00000$
$(bf_1+hf_2)-K_1L_1 = 0.00000$
$(cf_1+gf_2)-K_1L_1 = 0.00000$
$(df_2+ff_2)-K_1L_1 = -0.58343$
$(ef_2+ef_2)-K_1L_1 = 0.00000$



$eE_1 = 0.50000$

$E_1F_1 = 0.50518$

$N_2 = 10.00000$

$N_1 = 6.00000$

$I_1 = 3$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)} = 1.33333$$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)} = 2.40000$$

$$\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} = 4.50000$$

$$\frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} = 2.50000$$

$$\frac{N_1}{B} = 5.00000$$

$$(N_1 + 1) - \left(\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} + \frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} \right) = 0.00000$$

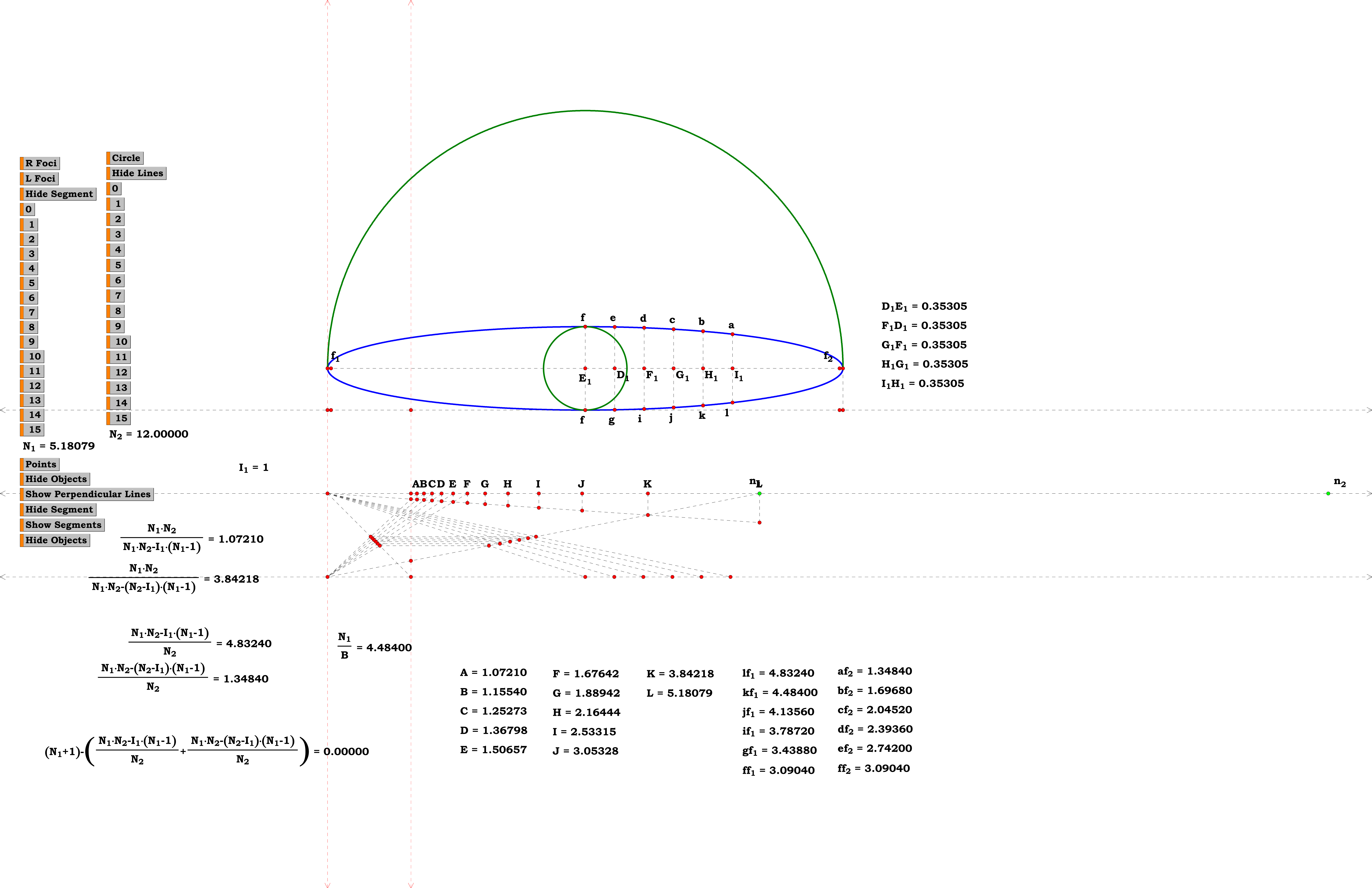
A = 1.09091
B = 1.20000
C = 1.33333
D = 1.50000
E = 1.71429

F = 2.00000
G = 2.40000
H = 3.00000
I = 4.00000
J = 6.00000

K = 12.00000

$af_1 = 5.50000$
$bf_1 = 5.00000$
$cf_1 = 4.50000$
$df_2 = 3.00000$
$ef_2 = 3.50000$

$if_2 = 1.50000$
$hf_2 = 2.00000$
$gf_2 = 2.50000$
$ff_2 = 3.00000$
$ef_2 = 3.50000$



$N_2 = 12.00000$

$N_1 = 5.18079$

$I_1 = 1$

$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)} = 1.07210$

$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)} = 3.84218$

$\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} = 4.83240$

$\frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} = 1.34840$

$\frac{N_1}{B} = 4.48400$

$(N_1 + 1) - \left(\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} + \frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} \right) = 0.00000$

$D_1E_1 = 0.35305$

$F_1D_1 = 0.35305$

$G_1F_1 = 0.35305$

$H_1G_1 = 0.35305$

$I_1H_1 = 0.35305$

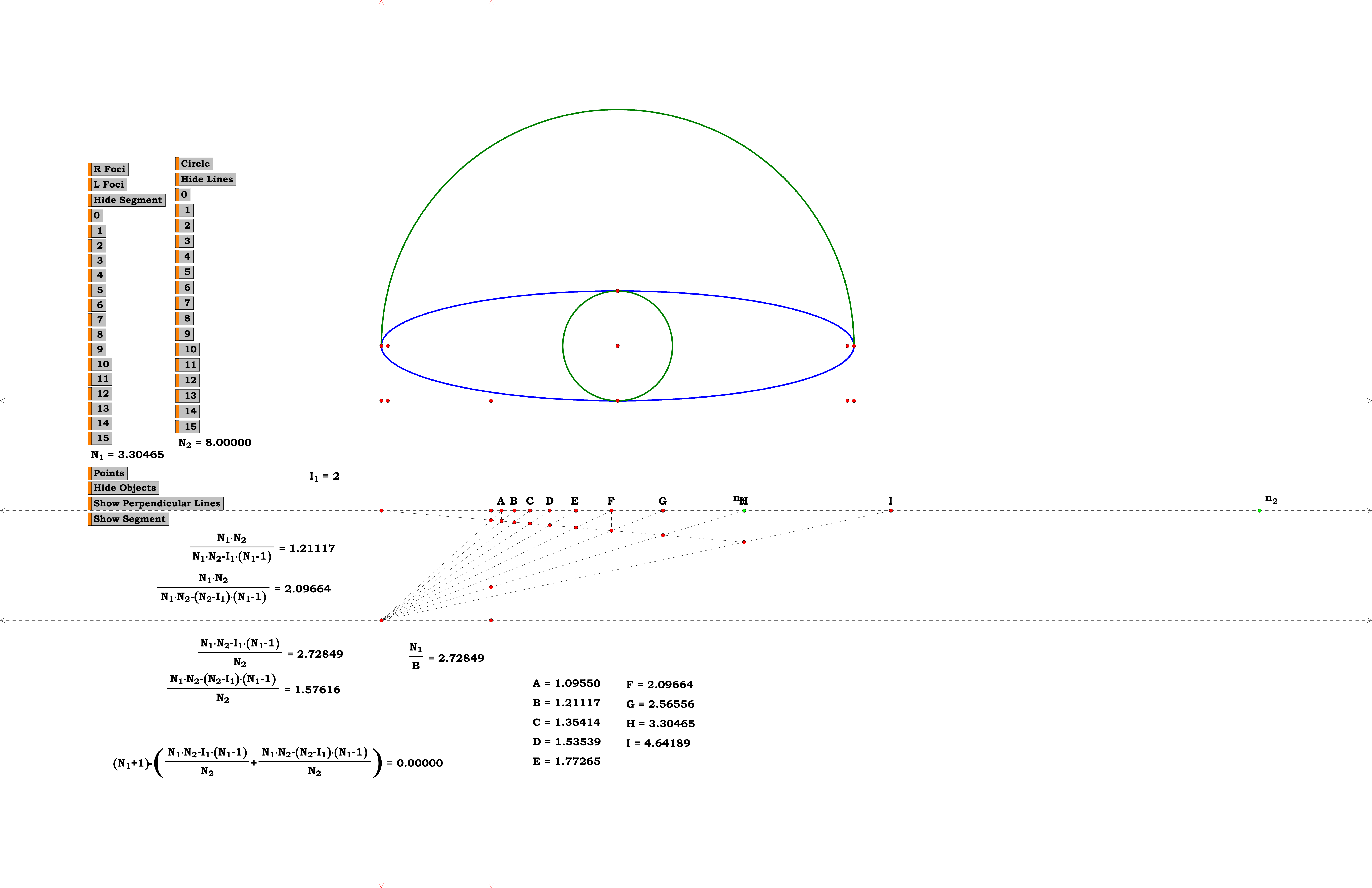
A = 1.07210
B = 1.15540
C = 1.25273
D = 1.36798
E = 1.50657

F = 1.67642
G = 1.88942
H = 2.16444
I = 2.53315
J = 3.05328

K = 3.84218
L = 5.18079

$lf_1 = 4.83240$
$kf_1 = 4.48400$
$jf_1 = 4.13560$
$if_1 = 3.78720$
$gf_1 = 3.43880$
$ff_1 = 3.09040$

$af_2 = 1.34840$
$bf_2 = 1.69680$
$cf_2 = 2.04520$
$df_2 = 2.39360$
$ef_2 = 2.74200$
$ff_2 = 3.09040$



$N_1 = 3.30465$

$N_2 = 8.00000$

$I_1 = 2$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)} = 1.21117$$

$$\frac{N_1 \cdot N_2}{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)} = 2.09664$$

$$\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} = 2.72849$$

$$\frac{N_1}{B} = 2.72849$$

$$\frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} = 1.57616$$

$A = 1.09550$

$B = 1.21117$

$C = 1.35414$

$D = 1.53539$

$E = 1.77265$

$F = 2.09664$

$G = 2.56556$

$H = 3.30465$

$I = 4.64189$

$$(N_1 + 1) - \left(\frac{N_1 \cdot N_2 - I_1 \cdot (N_1 - 1)}{N_2} + \frac{N_1 \cdot N_2 - (N_2 - I_1) \cdot (N_1 - 1)}{N_2} \right) = 0.00000$$

Exponential Series Notebook 1

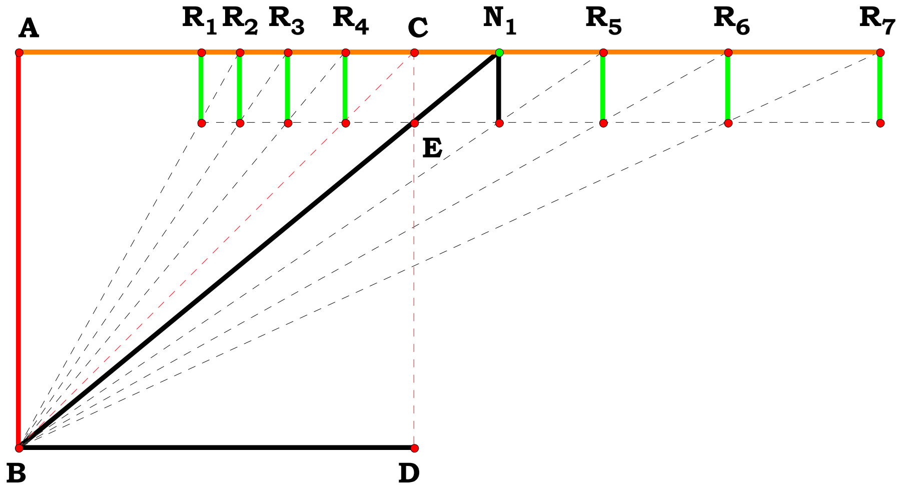
Zero from bottom.

Exponential Series Notebook 1A

$AB := 1$

$N_1 := 1.21468$

$N_1 = 1.21468$
$R_1 = 0.45935$
$R_2 = 0.55797$
$R_3 = 0.67776$
$R_4 = 0.82326$
$R_5 = 1.47545$
$R_6 = 1.79221$
$R_7 = 2.17697$



$$DE := \frac{1}{N_1}$$

$$R_4 := DE \quad R_3 := R_4 \cdot DE \quad R_2 := R_3 \cdot DE \quad R_1 := R_2 \cdot DE$$

$$R_5 := \frac{N_1}{DE} \quad R_6 := \frac{R_5}{DE} \quad R_7 := \frac{R_6}{DE}$$

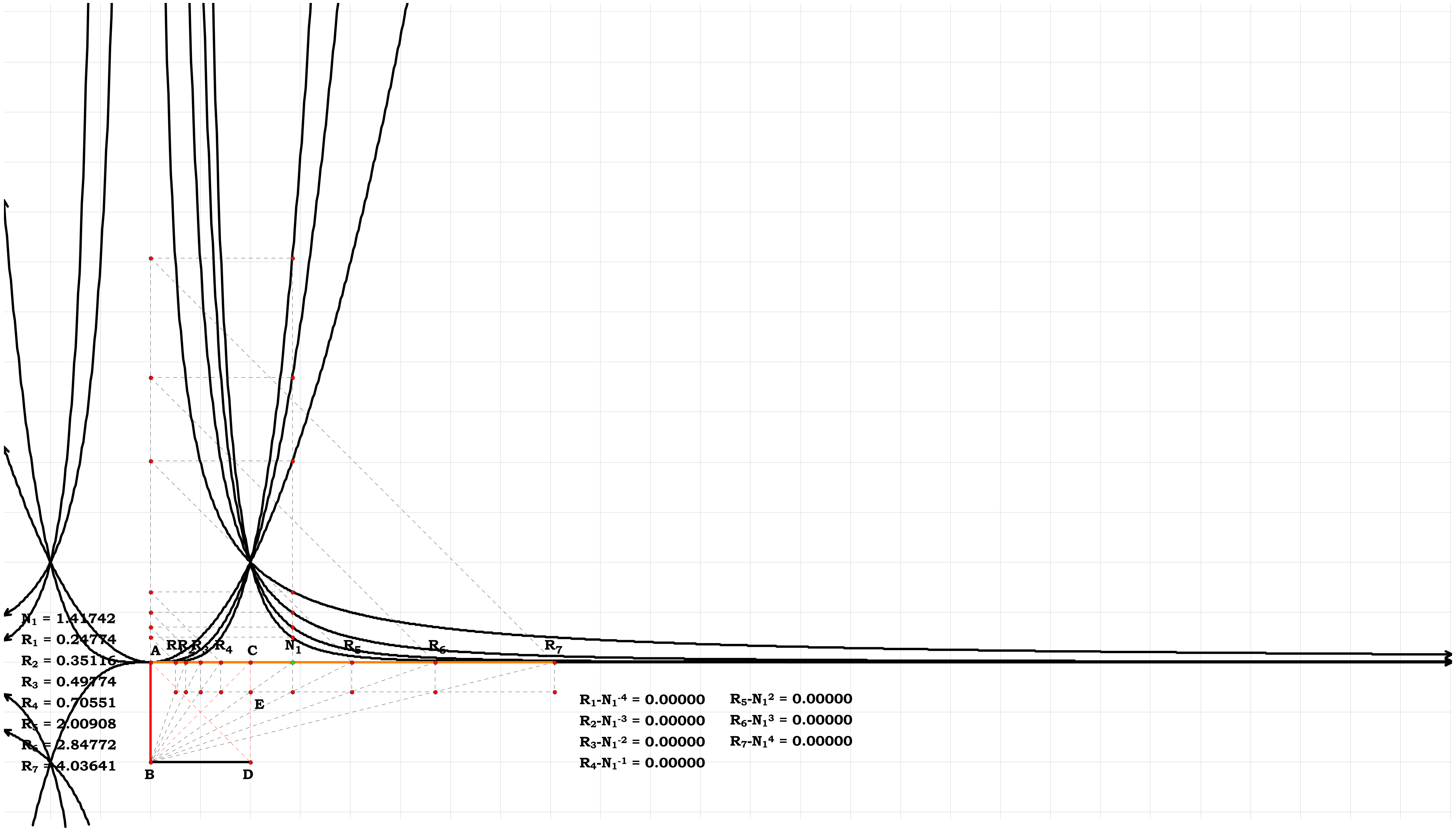
$$R_4 - \frac{1}{N_1} = 0 \quad R_3 - \frac{1}{N_1^{\;2}} = 0 \quad R_2 - \frac{1}{N_1^{\;3}} = 0 \quad R_1 - \frac{1}{N_1^{\;4}} = 0$$

$$R_5 - N_1^{\;2} = 0 \quad R_6 - N_1^{\;3} = 0 \quad R_7 - N_1^{\;4} = 0$$

$$R_1 - N_1^{\;-4} = 0 \quad R_2 - N_1^{\;-3} = 0 \quad R_3 - N_1^{\;-2} = 0 \quad R_4 - N_1^{\;-1} = 0 \quad AB - N_1^{\;0} = 0$$

$$N_1 - N_1^{\;1} = 0 \quad R_5 - N_1^{\;2} = 0 \quad R_6 - N_1^{\;3} = 0 \quad R_7 - N_1^{\;4} = 0$$

$R_1 = 0.459359$
$R_2 = 0.557975$
$R_3 = 0.67776$
$R_4 = 0.823262$
$R_5 = 1.475448$
$R_6 = 1.792197$
$R_7 = 2.176945$


N$_1$ = 1.41742
R$_1$ = 0.24774
R$_2$ = 0.35116
R$_3$ = 0.49774
R$_4$ = 0.70551
R$_5$ = 2.00908
R$_6$ = 2.84772
R$_7$ = 4.03641
A
R
R
R$_3$
R$_4$
C
N$_1$
R$_5$
R$_6$
R$_7$
E
B
D
R$_1$-N$_1$$^{-4}$ = 0.00000
R$_2$-N$_1$$^{-3}$ = 0.00000
R$_3$-N$_1$$^{-2}$ = 0.00000
R$_4$-N$_1$$^{-1}$ = 0.00000
R$_5$-N$_1$^{2} = 0.00000
R$_6$-N$_1$^{3} = 0.00000
R$_7$-N$_1$^{4} = 0.00000

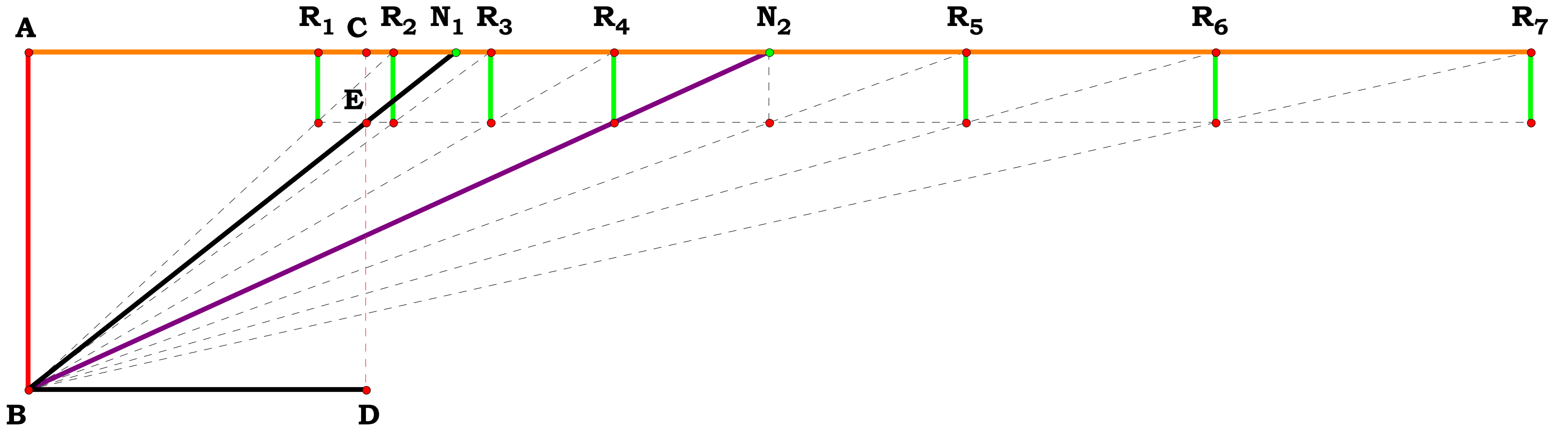
$AB := 1$

$N_1 := 1.26554$

$N_2 := 2.19224$

Exponential Series Notebook 2A

$N_1 = 1.26554$
$N_2 = 2.19224$
$R_1 = 0.85463$
$R_2 = 1.08158$
$R_3 = 1.36878$
$R_4 = 1.73225$
$R_5 = 2.77438$
$R_6 = 3.51110$
$R_7 = 4.44346$



$DE := \frac{1}{N_1}$ $\quad R_4 := N_2 \cdot DE \quad R_3 := R_4 \cdot DE$

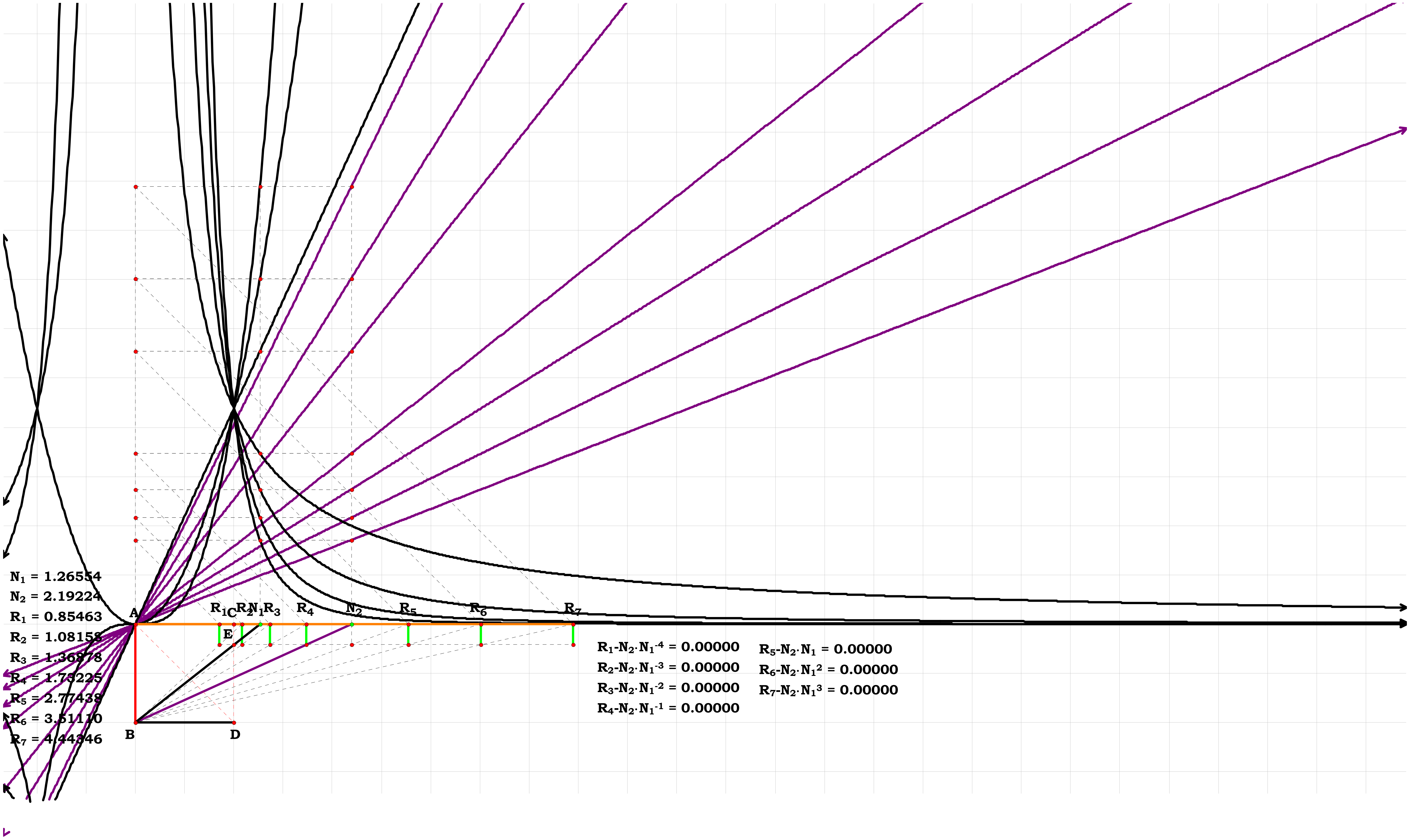
$R_2 := R_3 \cdot DE \quad R_1 := R_2 \cdot DE$

$R_5 := \frac{N_2}{DE} \quad R_6 := \frac{R_5}{DE} \quad R_7 := \frac{R_6}{DE}$

$R_1 - N_2 \cdot N_1^{-4} = 0 \quad R_2 - N_2 \cdot N_1^{-3} = 0 \quad R_3 - N_2 \cdot N_1^{-2} = 0 \quad R_4 - N_2 \cdot N_1^{-1} = 0$

$N_2 - N_2 \cdot N_1^{0} = 0 \quad R_5 - N_2 \cdot N_1^{1} = 0 \quad R_6 - N_2 \cdot N_1^{2} = 0 \quad R_7 - N_2 \cdot N_1^{3} = 0$

$R_1 = 0.854643$
$R_2 = 1.081585$
$R_3 = 1.368788$
$R_4 = 1.732257$
$R_5 = 2.774367$
$R_6 = 3.511073$
$R_7 = 4.443403$

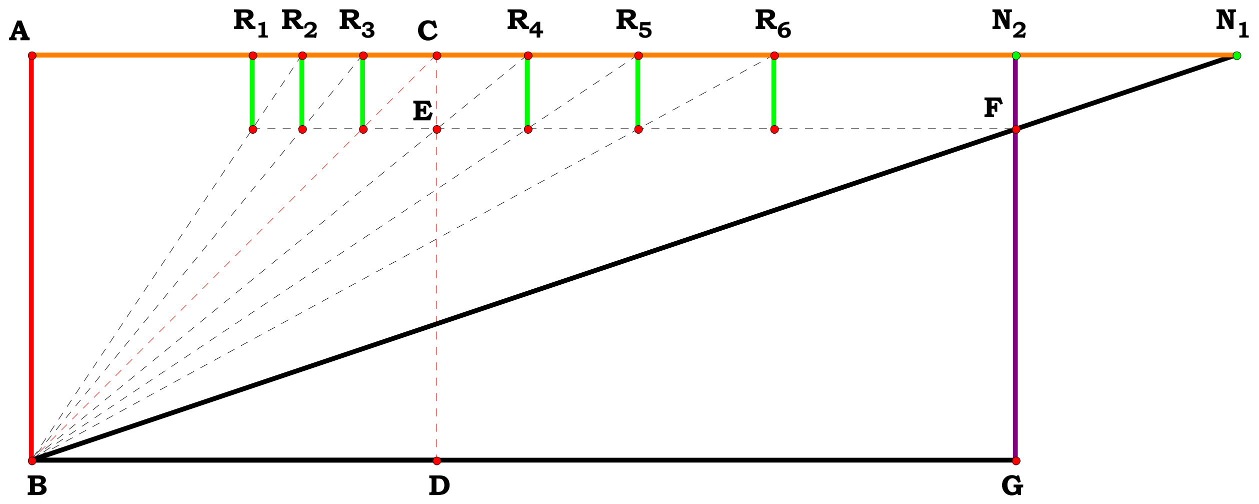

$N_1 = 1.26554$
$N_2 = 2.19224$
$R_1 = 0.85463$
$R_2 = 1.08158$
$R_3 = 1.36878$
$R_4 = 1.73225$
$R_5 = 2.77438$
$R_6 = 3.51110$
$R_7 = 4.44346$
A
R_1
C
R_2
N_1
R_3
R_4
N_2
R_5
R_6
R_7
E
B
D
$R_1 - N_2 \cdot N_1^{-4} = 0.00000$
$R_2 - N_2 \cdot N_1^{-3} = 0.00000$
$R_3 - N_2 \cdot N_1^{-2} = 0.00000$
$R_4 - N_2 \cdot N_1^{-1} = 0.00000$
$R_5 - N_2 \cdot N_1 = 0.00000$
$R_6 - N_2 \cdot N_1^2 = 0.00000$
$R_7 - N_2 \cdot N_1^3 = 0.00000$

$AB := 1$

$N_1 := 2.97381$

$N_2 := 2.42997$

Exponential Series Notebook 3A



$N_1 = 2.97381$
$N_2 = 2.42997$
$R_1 = 0.54558$
$R_2 = 0.66769$
$R_3 = 0.81712$
$R_4 = 1.22381$
$R_5 = 1.49770$
$R_6 = 1.83290$

$$FG := \frac{N_2}{N_1}$$

$$R_3 := AB \cdot FG \qquad R_2 := R_3 \cdot FG \qquad R_1 := R_2 \cdot FG$$

$$R_4 := \frac{AB}{FG} \qquad R_5 := \frac{R_4}{FG} \qquad R_6 := \frac{R_5}{FG}$$

$$R_1 - \left(\frac{N_1}{N_2}\right)^{-3} = 0 \qquad R_2 - \left(\frac{N_1}{N_2}\right)^{-2} = 0 \qquad R_3 - \left(\frac{N_1}{N_2}\right)^{-1} = 0 \qquad AB - \left(\frac{N_1}{N_2}\right)^{0} = 0$$

$$R_4 - \left(\frac{N_1}{N_2}\right)^{1} = 0 \qquad R_5 - \left(\frac{N_1}{N_2}\right)^{2} = 0 \qquad R_6 - \left(\frac{N_1}{N_2}\right)^{3} = 0$$

$R_1 = 0.545586$

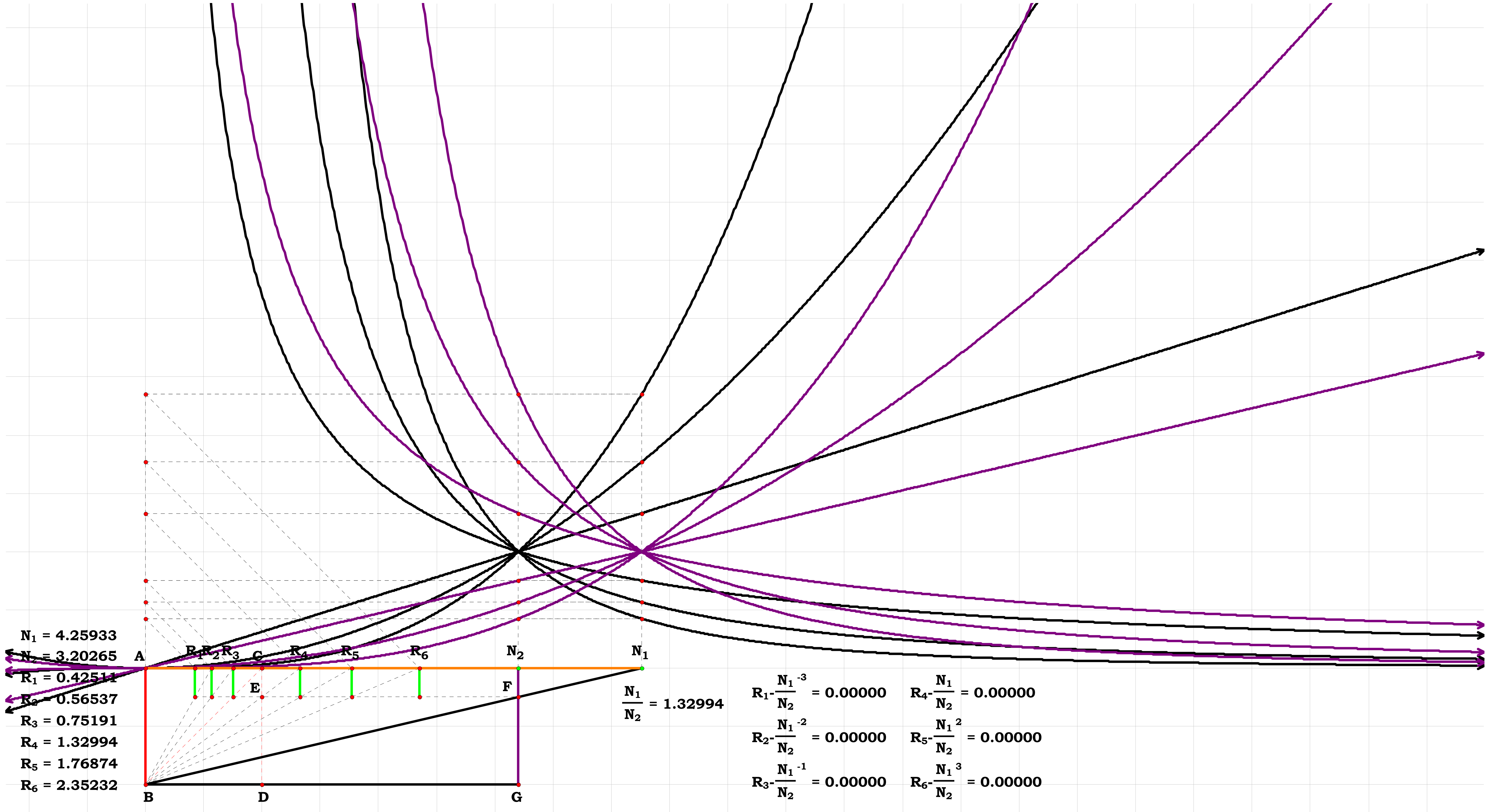
$R_2 = 0.667691$

$R_3 = 0.817123$

$R_4 = 1.223805$

$R_5 = 1.497699$

$R_6 = 1.832892$


$N_1 = 4.25933$
$N_2 = 3.20265$
$R_1 = 0.42511$
$R_2 = 0.56537$
$R_3 = 0.75191$
$R_4 = 1.32994$
$R_5 = 1.76874$
$R_6 = 2.35232$
A
R_1
R_2
R_3
C
R_4
R_5
R_6
N_2
N_1
E
F
B
D
G
$\frac{N_1}{N_2} = 1.32994$
$R_1 - \frac{N_1}{N_2}^{-3} = 0.00000$
$R_2 - \frac{N_1}{N_2}^{-2} = 0.00000$
$R_3 - \frac{N_1}{N_2}^{-1} = 0.00000$
$R_4 - \frac{N_1}{N_2} = 0.00000$
$R_5 - \frac{N_1}{N_2}^{2} = 0.00000$
$R_6 - \frac{N_1}{N_2}^{3} = 0.00000$

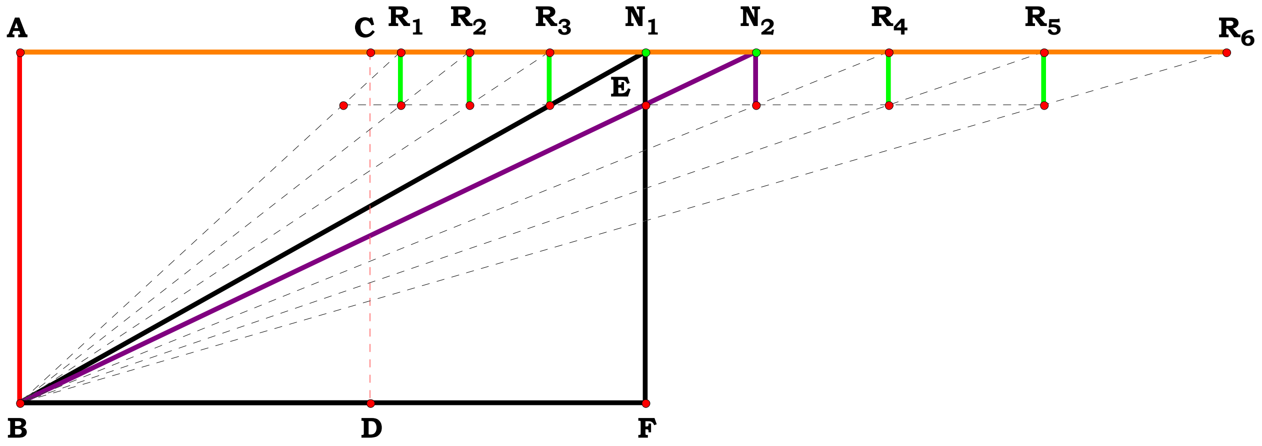
Exponential Series Notebook 4A

$$AB := 1$$

$$N_1 := 1.78153$$

$$N_2 := 2.10006$$

$N_1 = 1.78153$
$N_2 = 2.10006$
$R_1 = 1.08762$
$R_2 = 1.28208$
$R_3 = 1.51131$
$R_4 = 2.47554$
$R_5 = 2.91816$
$R_6 = 3.43991$



$$EF := \frac{N_1}{N_2}$$

$$R_3 := N_1 \cdot EF \qquad R_2 := R_3 \cdot EF \qquad R_1 := R_2 \cdot EF$$

$$R_4 := \frac{N_2}{EF} \qquad R_5 := \frac{R_4}{EF} \qquad R_6 := \frac{R_5}{EF}$$

$$R_1 - N_1 \cdot \left(\frac{N_2}{N_1}\right)^{-3} = 0 \qquad R_2 - N_1 \cdot \left(\frac{N_2}{N_1}\right)^{-2} = 0 \qquad R_3 - N_1 \cdot \left(\frac{N_2}{N_1}\right)^{-1} = 0$$

$$N_1 - N_1 \cdot \left(\frac{N_2}{N_1}\right)^{0} = 0 \qquad N_2 - N_1 \cdot \left(\frac{N_2}{N_1}\right)^{1} = 0$$

$$R_4 - N_1 \cdot \left(\frac{N_2}{N_1}\right)^{2} = 0 \qquad R_5 - N_1 \cdot \left(\frac{N_2}{N_1}\right)^{3} = 0 \qquad R_6 - N_1 \cdot \left(\frac{N_2}{N_1}\right)^{4} = 0$$

$$R_1 = 1.087621$$

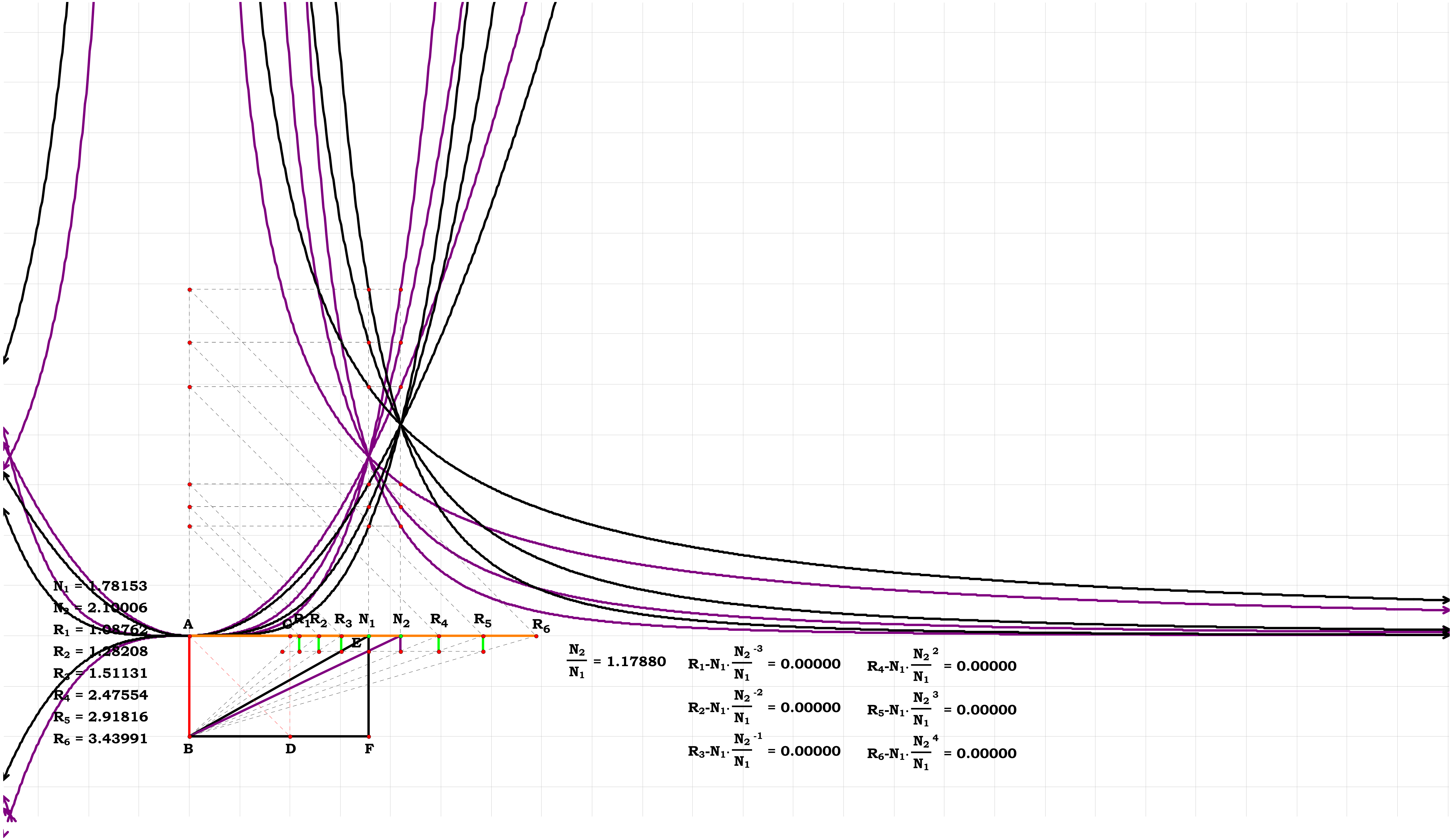
$$R_2 = 1.282083$$

$$R_3 = 1.511314$$

$$R_4 = 2.475542$$

$$R_5 = 2.918158$$

$$R_6 = 3.439912$$



$N_1 = 1.78153$
$N_2 = 2.10006$
$R_1 = 1.08762$
$R_2 = 1.28208$
$R_3 = 1.51131$
$R_4 = 2.47554$
$R_5 = 2.91816$
$R_6 = 3.43991$

$$\frac{N_2}{N_1} = 1.17880$$

$$R_1 - N_1 \cdot \frac{N_2}{N_1}^{-3} = 0.00000 \qquad R_4 - N_1 \cdot \frac{N_2}{N_1}^{2} = 0.00000$$

$$R_2 - N_1 \cdot \frac{N_2}{N_1}^{-2} = 0.00000 \qquad R_5 - N_1 \cdot \frac{N_2}{N_1}^{3} = 0.00000$$

$$R_3 - N_1 \cdot \frac{N_2}{N_1}^{-1} = 0.00000 \qquad R_6 - N_1 \cdot \frac{N_2}{N_1}^{4} = 0.00000$$

Exponential Series Notebook 5A

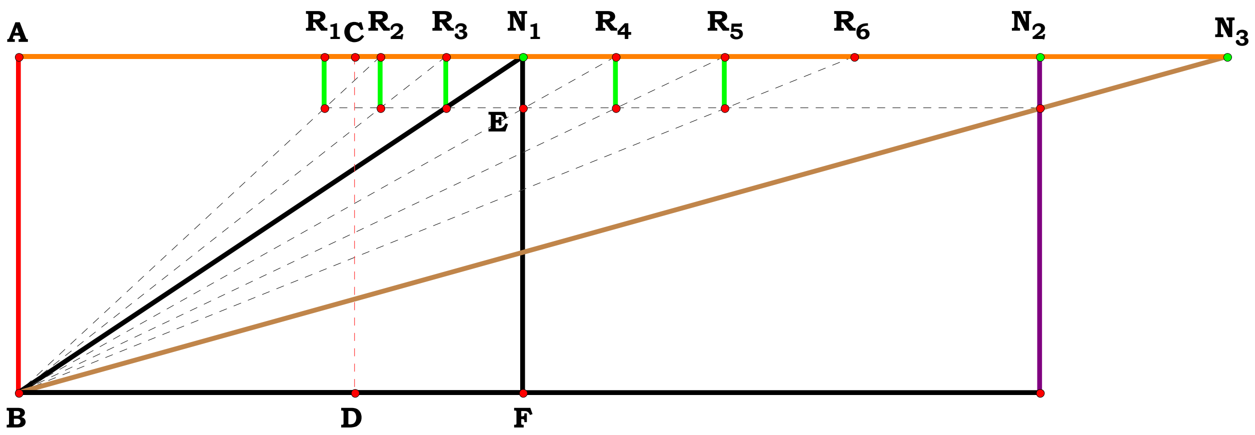
$AB := 1$

$N_1 := 1.50044$

$N_2 := 3.03531$

$N_3 := 3.58993$

$N_1 = 1.50044$
$N_2 = 3.03531$
$N_3 = 3.58993$
$R_1 = 0.90692$
$R_2 = 1.07264$
$R_3 = 1.26863$
$R_4 = 1.77461$
$R_5 = 2.09887$
$R_6 = 2.48239$



$$EF := \frac{N_2}{N_3}$$

$R_3 := N_1 \cdot EF \qquad R_2 := R_3 \cdot EF \qquad R_1 := R_2 \cdot EF$

$$R_4 := \frac{N_1}{EF} \qquad R_5 := \frac{R_4}{EF} \qquad R_6 := \frac{R_5}{EF}$$

$$R_1 - N_1 \cdot \left(\frac{N_3}{N_2}\right)^{-3} = 0 \qquad R_2 - N_1 \cdot \left(\frac{N_3}{N_2}\right)^{-2} = 0 \qquad R_3 - N_1 \cdot \left(\frac{N_3}{N_2}\right)^{-1} = 0 \qquad N_1 - N_1 \cdot \left(\frac{N_3}{N_2}\right)^{0} = 0$$

$$R_4 - N_1 \cdot \left(\frac{N_3}{N_2}\right)^{1} = 0 \qquad R_5 - N_1 \cdot \left(\frac{N_3}{N_2}\right)^{2} = 0 \qquad R_6 - N_1 \cdot \left(\frac{N_3}{N_2}\right)^{3} = 0$$

$R_1 = 0.906922$

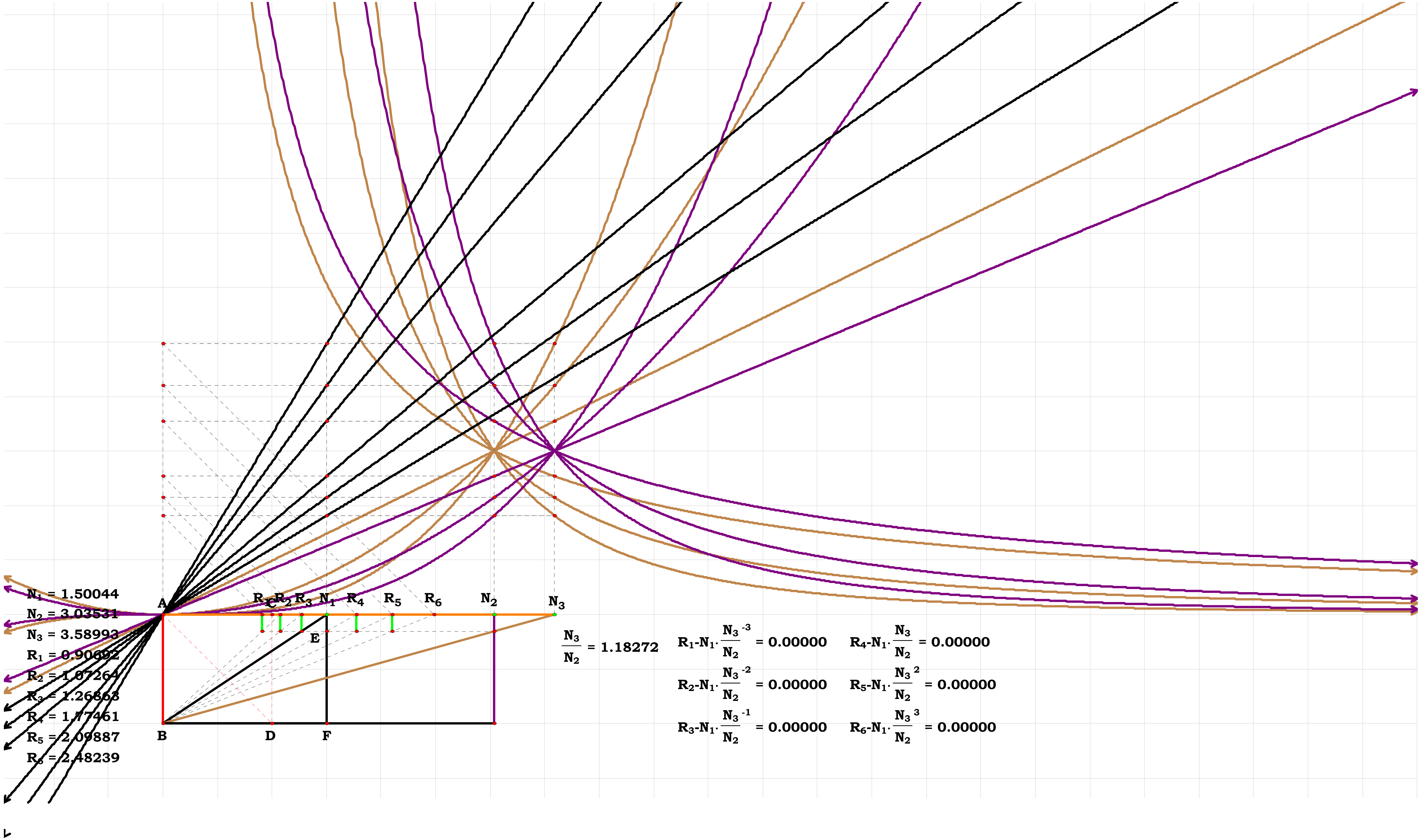
$R_2 = 1.072637$

$R_3 = 1.268632$

$R_4 = 1.774604$

$R_5 = 2.098865$

$R_6 = 2.482375$


$N_1 = 1.50044$
$N_2 = 3.03531$
$N_3 = 3.58993$
$R_1 = 0.90692$
$R_2 = 1.07264$
$R_3 = 1.26863$
$R_4 = 1.77461$
$R_5 = 2.09887$
$R_6 = 2.48239$
A
R_1
C
R_2
R_3
N_1
R_4
R_5
R_6
N_2
N_3
E
B
D
F
$\frac{N_3}{N_2} = 1.18272$
$R_1 - N_1 \cdot \frac{N_3}{N_2}^{-3} = 0.00000$
$R_2 - N_1 \cdot \frac{N_3}{N_2}^{-2} = 0.00000$
$R_3 - N_1 \cdot \frac{N_3}{N_2}^{-1} = 0.00000$
$R_4 - N_1 \cdot \frac{N_3}{N_2} = 0.00000$
$R_5 - N_1 \cdot \frac{N_3}{N_2}^{2} = 0.00000$
$R_6 - N_1 \cdot \frac{N_3}{N_2}^{3} = 0.00000$

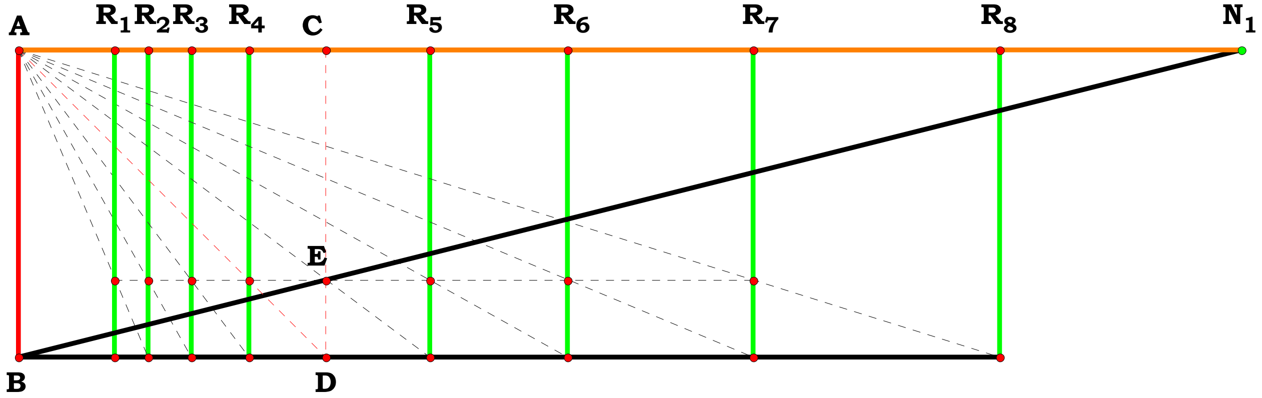
Zero from top.

Exponential Series Notebook 1B

$AB := 1$

$N_1 := 3.97165$

$N_1 = 3.97165$
$R_1 = 0.31341$
$R_2 = 0.41887$
$R_3 = 0.55983$
$R_4 = 0.74822$
$R_5 = 1.33651$
$R_6 = 1.78627$
$R_7 = 2.38737$
$R_8 = 3.19076$



$$DE := \frac{1}{N_1}$$

$$R_4 := 1\cdot(1-DE) \quad R_3 := R_4\cdot(1-DE) \quad R_2 := R_3\cdot(1-DE) \quad R_1 := R_2\cdot(1-DE)$$

$$R_5 := \frac{1}{(1-DE)} \quad R_6 := R_5\cdot\frac{1}{(1-DE)} \quad R_7 := R_6\cdot\frac{1}{(1-DE)} \quad R_8 := R_7\cdot\frac{1}{(1-DE)}$$

$$R_1 - \left(\frac{N_1}{N_1-1}\right)^{-4} = 0 \quad R_2 - \left(\frac{N_1}{N_1-1}\right)^{-3} = 0 \quad R_3 - \left(\frac{N_1}{N_1-1}\right)^{-2} = 0 \quad R_4 - \left(\frac{N_1}{N_1-1}\right)^{-1} = 0$$

$$AB - \left(\frac{N_1}{N_1-1}\right)^{0} = 0$$

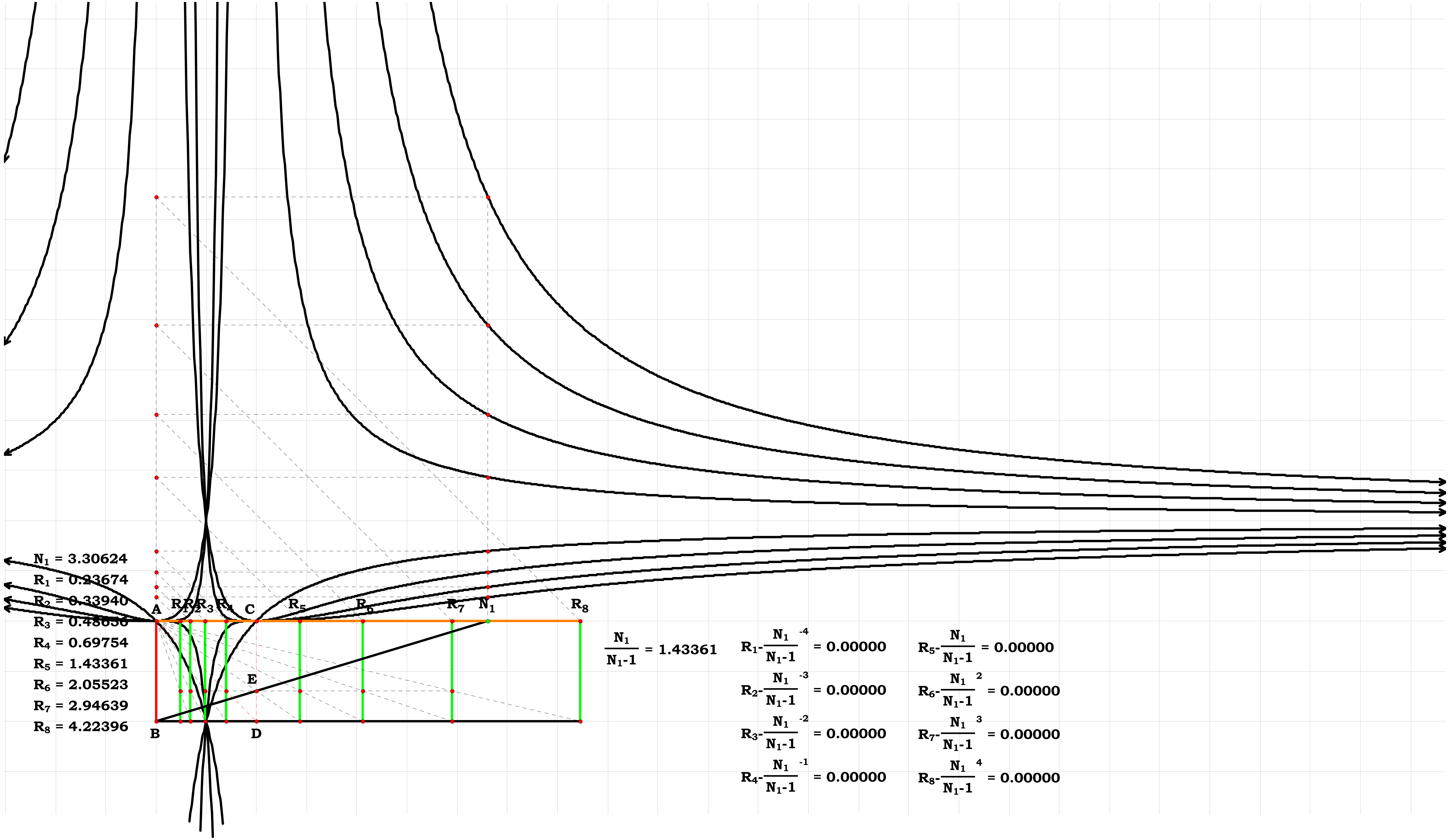
$$R_5 - \left(\frac{N_1}{N_1-1}\right)^{1} = 0 \quad R_6 - \left(\frac{N_1}{N_1-1}\right)^{2} = 0 \quad R_7 - \left(\frac{N_1}{N_1-1}\right)^{3} = 0 \quad R_8 - \left(\frac{N_1}{N_1-1}\right)^{4} = 0$$

$R_1 = 0.313406$
$R_2 = 0.418871$
$R_3 = 0.559826$
$R_4 = 0.748215$

$R_5 = 1.336513$
$R_6 = 1.786268$
$R_7 = 2.387371$
$R_8 = 3.190753$

$$R_1 - \frac{N_1^{\,4} - 4\cdot N_1^{\,3} + 6\cdot N_1^{\,2} - 4\cdot N_1 + 1}{N_1^{\,4}} = 0$$

$$R_8 - \frac{N_1^{\,4}}{N_1^{\,4} - 4\cdot N_1^{\,3} + 6\cdot N_1^{\,2} - 4\cdot N_1 + 1} = 0$$


$N_1 = 3.30624$
$R_1 = 0.23674$
$R_2 = 0.33940$
$R_3 = 0.48656$
$R_4 = 0.69754$
$R_5 = 1.43361$
$R_6 = 2.05523$
$R_7 = 2.94639$
$R_8 = 4.22396$
A
R_1
R_2
R_3
R_4
C
R_5
R_6
R_7
N_1
R_8
E
B
D
$\frac{N_1}{N_1-1} = 1.43361$
$R_1-\frac{N_1}{N_1-1}^{-4} = 0.00000$
$R_2-\frac{N_1}{N_1-1}^{-3} = 0.00000$
$R_3-\frac{N_1}{N_1-1}^{-2} = 0.00000$
$R_4-\frac{N_1}{N_1-1}^{-1} = 0.00000$
$R_5-\frac{N_1}{N_1-1} = 0.00000$
$R_6-\frac{N_1}{N_1-1}^{2} = 0.00000$
$R_7-\frac{N_1}{N_1-1}^{3} = 0.00000$
$R_8-\frac{N_1}{N_1-1}^{4} = 0.00000$

Exponential Series Notebook 2B

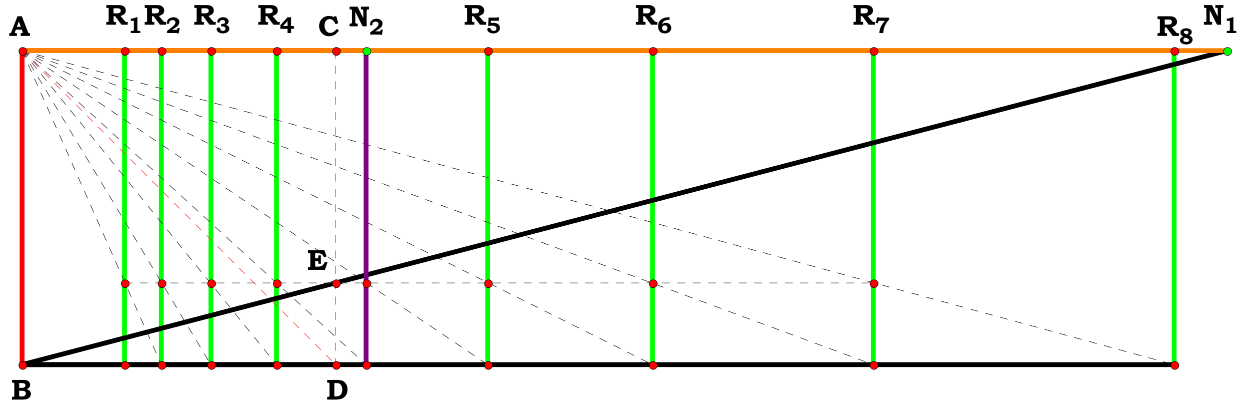
$AB := 1$

$N_1 := 3.83886$

$N_2 := 1.09689$

$$DE := \frac{1}{N_1}$$

$N_1 = 3.83886$
$N_2 = 1.09689$
$R_1 = 0.32804$
$R_2 = 0.44359$
$R_3 = 0.59985$
$R_4 = 0.81115$
$R_5 = 1.48327$
$R_6 = 2.00576$
$R_7 = 2.71230$
$R_8 = 3.66771$



$$R_4 := N_2\cdot(1 - DE) \qquad R_3 := R_4\cdot(1 - DE) \qquad R_2 := R_3\cdot(1 - DE) \qquad R_1 := R_2\cdot(1 - DE)$$

$$R_5 := \frac{N_2}{(1 - DE)} \qquad R_6 := \frac{R_5}{(1 - DE)} \qquad R_7 := \frac{R_6}{(1 - DE)} \qquad R_8 := \frac{R_7}{(1 - DE)}$$

$$R_1 - N_2\cdot\left(\frac{N_1}{N_1 - 1}\right)^{-4} = 0 \qquad R_2 - N_2\cdot\left(\frac{N_1}{N_1 - 1}\right)^{-3} = 0 \qquad R_3 - N_2\cdot\left(\frac{N_1}{N_1 - 1}\right)^{-2} = 0 \qquad R_4 - N_2\cdot\left(\frac{N_1}{N_1 - 1}\right)^{-1} = 0$$

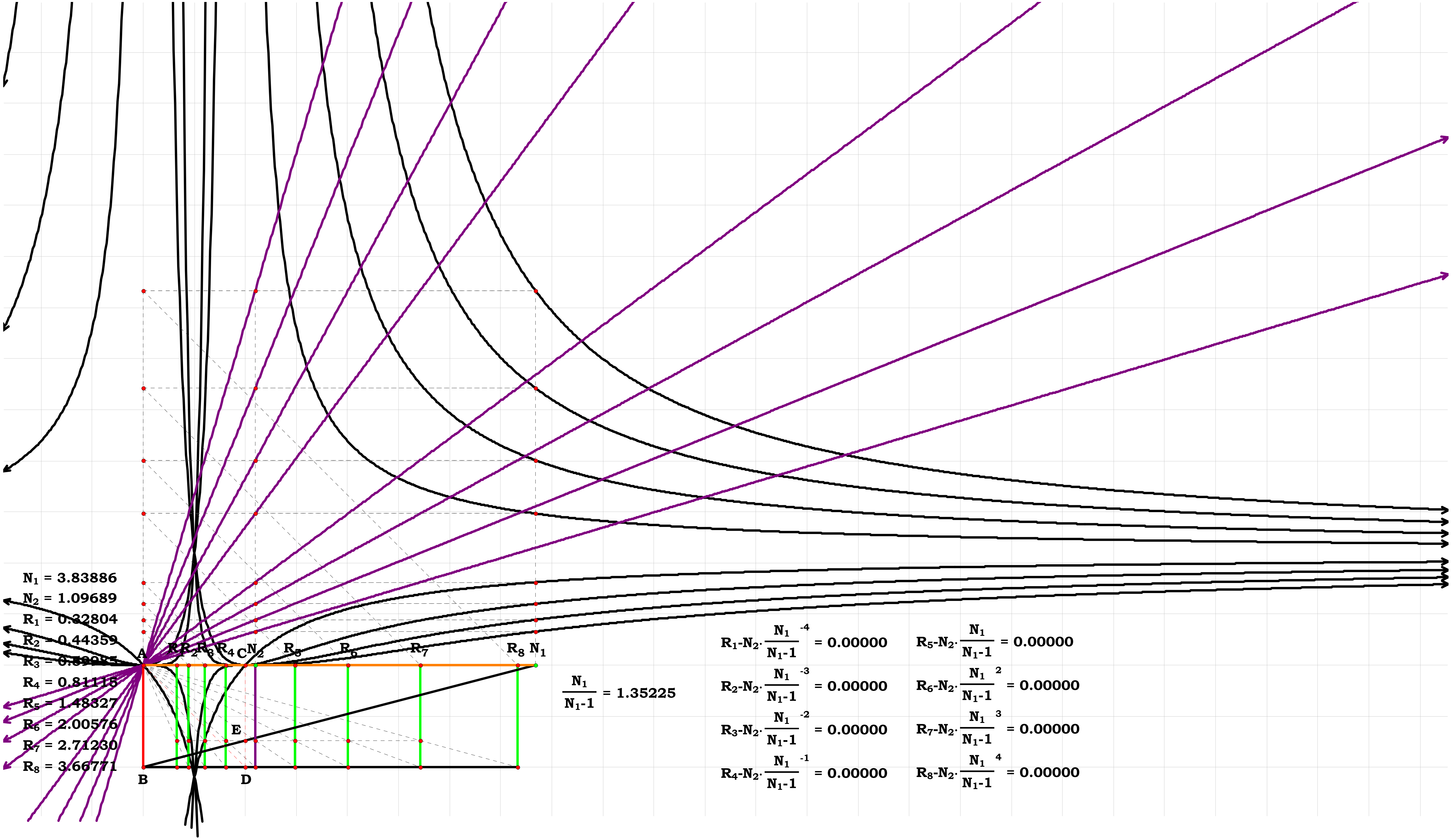
$$N_2 - N_2\cdot\left(\frac{N_1}{N_1 - 1}\right)^{0} = 0$$

$$R_5 - N_2\cdot\left(\frac{N_1}{N_1 - 1}\right)^{1} = 0 \qquad R_6 - N_2\cdot\left(\frac{N_1}{N_1 - 1}\right)^{2} = 0 \qquad R_7 - N_2\cdot\left(\frac{N_1}{N_1 - 1}\right)^{3} = 0 \qquad R_8 - N_2\cdot\left(\frac{N_1}{N_1 - 1}\right)^{4} = 0$$

$R_1 = 0.328042$ $\qquad R_5 = 1.483274$
$R_2 = 0.443597$ $\qquad R_6 = 2.005763$
$R_3 = 0.599855$ $\qquad R_7 = 2.712302$
$R_4 = 0.811157$ $\qquad R_8 = 3.667721$

$$R_1 - \frac{N_2\cdot N_1^{\,4} - 4\cdot N_2\cdot N_1^{\,3} + 6\cdot N_2\cdot N_1^{\,2} - 4\cdot N_2\cdot N_1 + N_2}{N_1^{\,4}} = 0$$

$$R_8 - \frac{N_1^{\,4}\cdot N_2}{N_1^{\,4} - 4\cdot N_1^{\,3} + 6\cdot N_1^{\,2} - 4\cdot N_1 + 1} = 0$$

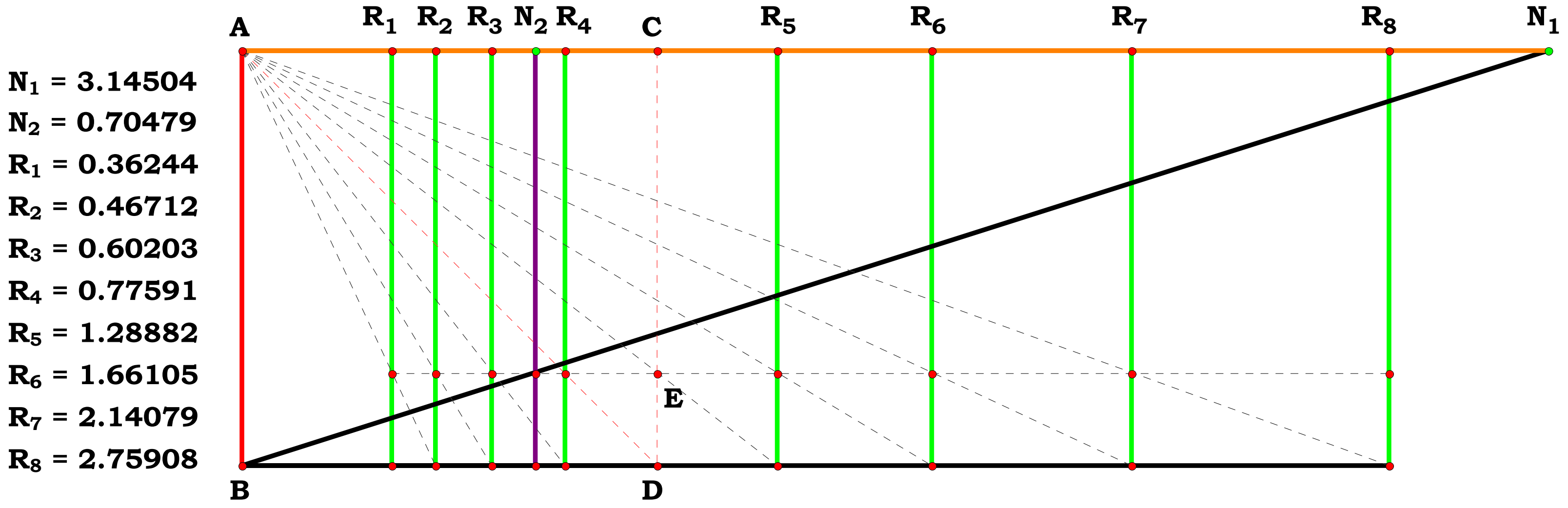

N₁ = 3.83886
N₂ = 1.09689
R₁ = 0.32804
R₂ = 0.44359
R₃ = 0.59985
R₄ = 0.81115
R₅ = 1.48327
R₆ = 2.00576
R₇ = 2.71230
R₈ = 3.66771
A
R₁
R₂
R₃
R₄
C
N₂
R₅
R₆
R₇
R₈
N₁
E
B
D
N₁/(N₁-1) = 1.35225
R₁-N₂·(N₁/(N₁-1))^-4 = 0.00000
R₂-N₂·(N₁/(N₁-1))^-3 = 0.00000
R₃-N₂·(N₁/(N₁-1))^-2 = 0.00000
R₄-N₂·(N₁/(N₁-1))^-1 = 0.00000
R₅-N₂·(N₁/(N₁-1)) = 0.00000
R₆-N₂·(N₁/(N₁-1))^2 = 0.00000
R₇-N₂·(N₁/(N₁-1))^3 = 0.00000
R₈-N₂·(N₁/(N₁-1))^4 = 0.00000

Exponential Series Notebook 3B

$AB := 1$

$N_1 := 3.14504$

$N_2 := .70479$



$$DE := \frac{N_2}{N_1}$$

$$R_4 := 1\cdot(1-DE) \qquad R_3 := R_4\cdot(1-DE)$$

$$R_2 := R_3\cdot(1-DE) \qquad R_1 := R_2\cdot(1-DE)$$

$$R_5 := \frac{1}{(1-DE)} \qquad R_6 := \frac{R_5}{(1-DE)} \qquad R_7 := \frac{R_6}{(1-DE)} \qquad R_8 := \frac{R_7}{(1-DE)}$$

$$R_1 - \left(\frac{N_1}{N_1-N_2}\right)^{-4} = 0 \qquad R_2 - \left(\frac{N_1}{N_1-N_2}\right)^{-3} = 0 \qquad R_3 - \left(\frac{N_1}{N_1-N_2}\right)^{-2} = 0 \qquad R_4 - \left(\frac{N_1}{N_1-N_2}\right)^{-1} = 0$$

$$AB - \left(\frac{N_1}{N_1-N_2}\right)^{0} = 0$$

$$R_5 - \left(\frac{N_1}{N_1-N_2}\right)^{1} = 0 \qquad R_6 - \left(\frac{N_1}{N_1-N_2}\right)^{2} = 0 \qquad R_7 - \left(\frac{N_1}{N_1-N_2}\right)^{3} = 0 \qquad R_8 - \left(\frac{N_1}{N_1-N_2}\right)^{4} = 0$$

$R_1 = 0.362437$ $\qquad R_5 = 1.288819$

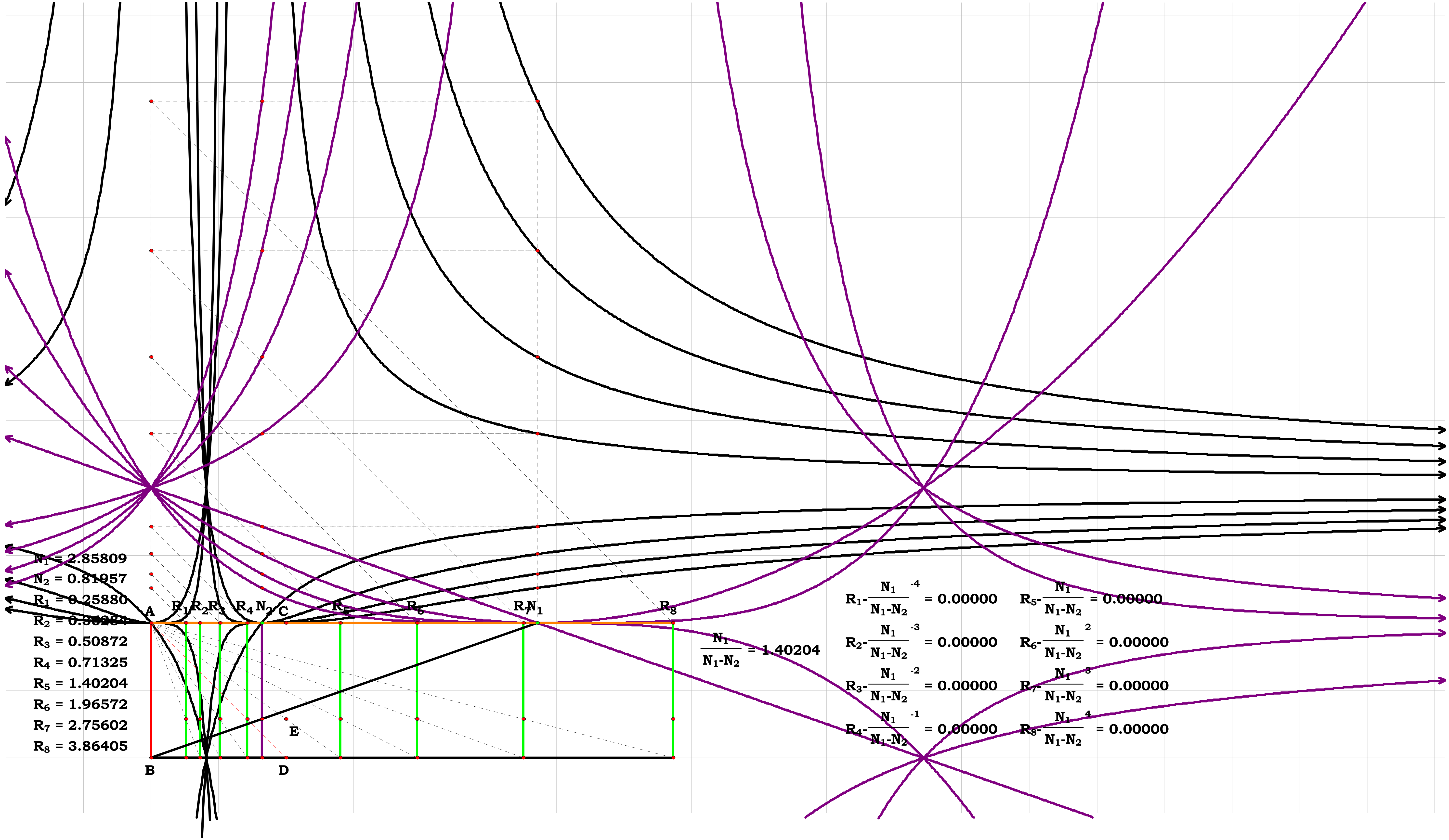
$R_2 = 0.467116$ $\qquad R_6 = 1.661054$

$R_3 = 0.602027$ $\qquad R_7 = 2.140797$

$R_4 = 0.775904$ $\qquad R_8 = 2.7591$

$$R_1 - \frac{N_1^{\,4} - 4\cdot N_1^{\,3}\cdot N_2 + 6\cdot N_1^{\,2}\cdot N_2^{\,2} - 4\cdot N_1\cdot N_2^{\,3} + N_2^{\,4}}{N_1^{\,4}} = 0$$

$$R_8 - \frac{N_1^{\,4}}{N_1^{\,4} - 4\cdot N_1^{\,3}\cdot N_2 + 6\cdot N_1^{\,2}\cdot N_2^{\,2} - 4\cdot N_1\cdot N_2^{\,3} + N_2^{\,4}} = 0$$


$N_1 = 2.85809$
$N_2 = 0.81957$
$R_1 = 0.25880$
$R_2 = 0.36284$
$R_3 = 0.50872$
$R_4 = 0.71325$
$R_5 = 1.40204$
$R_6 = 1.96572$
$R_7 = 2.75602$
$R_8 = 3.86405$
A
R_1
R_2
R_3
R_4
N_2
C
R_5
R_6
R_7
N_1
R_8
B
D
E
$\frac{N_1}{N_1-N_2} = 1.40204$
$R_1-\frac{N_1}{N_1-N_2}^{-4} = 0.00000$
$R_2-\frac{N_1}{N_1-N_2}^{-3} = 0.00000$
$R_3-\frac{N_1}{N_1-N_2}^{-2} = 0.00000$
$R_4-\frac{N_1}{N_1-N_2}^{-1} = 0.00000$
$R_5-\frac{N_1}{N_1-N_2} = 0.00000$
$R_6-\frac{N_1}{N_1-N_2}^{2} = 0.00000$
$R_7-\frac{N_1}{N_1-N_2}^{3} = 0.00000$
$R_8-\frac{N_1}{N_1-N_2}^{4} = 0.00000$

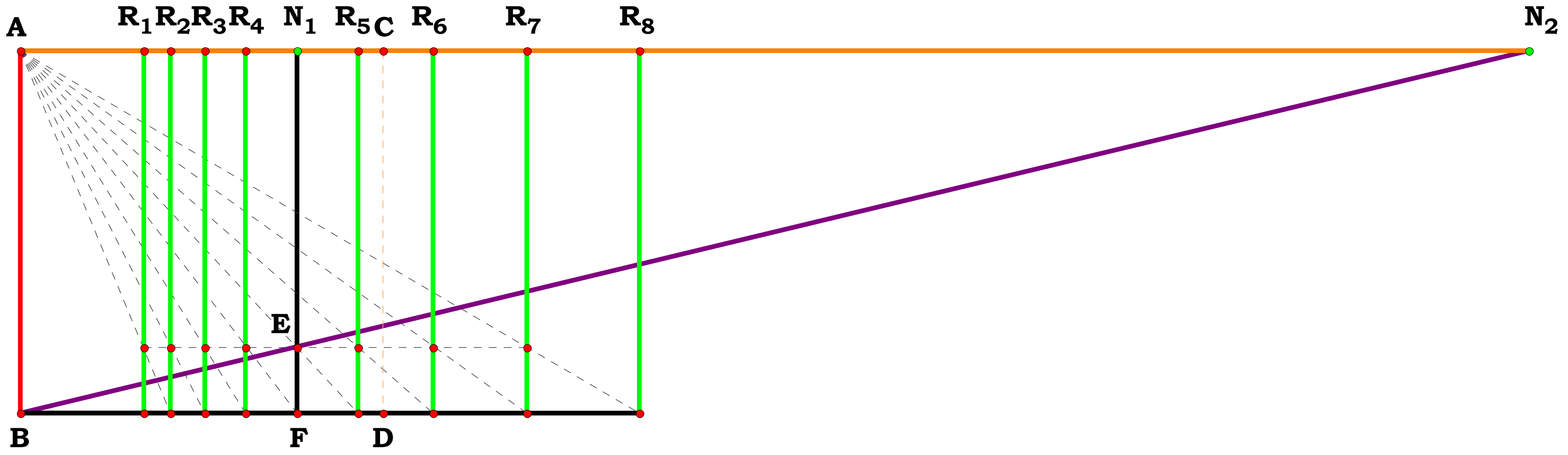
Exponential Series Notebook 4B

$AB := 1$

$N_1 := .76014$

$N_2 := 4.15521$

$N_1 = 0.76014$
$N_2 = 4.15521$
$R_1 = 0.33878$
$R_2 = 0.41463$
$R_3 = 0.50746$
$R_4 = 0.62108$
$R_5 = 0.93033$
$R_6 = 1.13862$
$R_7 = 1.39355$
$R_8 = 1.70556$



$$EF := \frac{N_1}{N_2}$$

$R_4 := N_1 \cdot (1 - EF)$ $\quad R_3 := R_4 \cdot (1 - EF)$

$R_2 := R_3 \cdot (1 - EF)$ $\quad R_1 := R_2 \cdot (1 - EF)$

$$R_5 := \frac{N_1}{1 - EF} \qquad R_6 := \frac{R_5}{1 - EF} \qquad R_7 := \frac{R_6}{1 - EF} \qquad R_8 := \frac{R_7}{1 - EF}$$

$$R_1 - N_1 \cdot \left(\frac{N_2}{N_2 - N_1}\right)^{-4} = 0 \qquad R_2 - N_1 \cdot \left(\frac{N_2}{N_2 - N_1}\right)^{-3} = 0 \qquad R_3 - N_1 \cdot \left(\frac{N_2}{N_2 - N_1}\right)^{-2} = 0 \qquad R_4 - N_1 \cdot \left(\frac{N_2}{N_2 - N_1}\right)^{-1} = 0$$

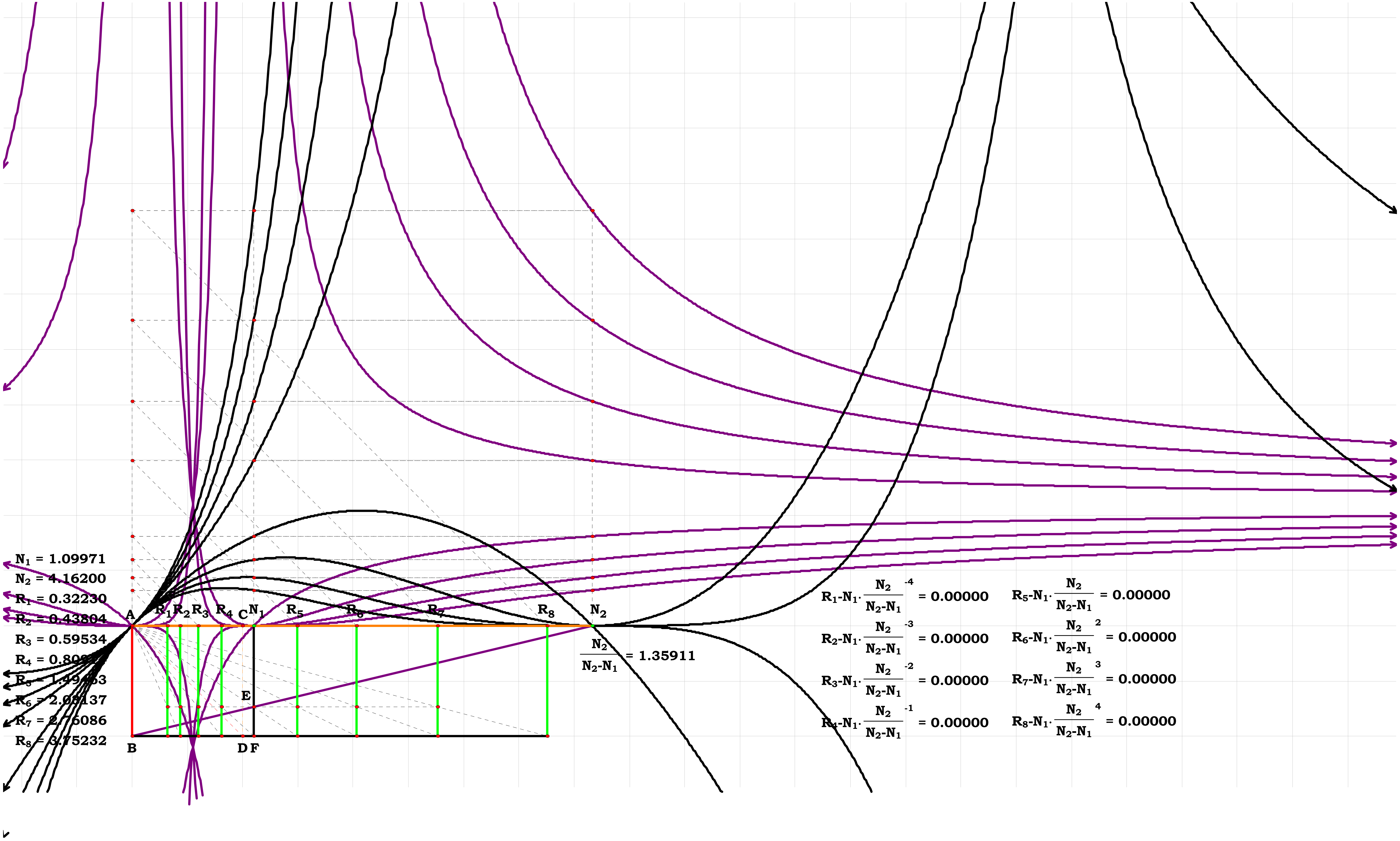
$$N_1 - N_1 \cdot \left(\frac{N_2}{N_2 - N_1}\right)^{0} = 0$$

$$R_5 - N_1 \cdot \left(\frac{N_2}{N_2 - N_1}\right)^{1} = 0 \qquad R_6 - N_1 \cdot \left(\frac{N_2}{N_2 - N_1}\right)^{2} = 0 \qquad R_7 - N_1 \cdot \left(\frac{N_2}{N_2 - N_1}\right)^{3} = 0 \qquad R_8 - N_1 \cdot \left(\frac{N_2}{N_2 - N_1}\right)^{4} = 0$$

$R_1 = 0.338779$ $\quad R_5 = 0.930332$
$R_2 = 0.41463$ $\quad R_6 = 1.138629$
$R_3 = 0.507464$ $\quad R_7 = 1.393562$
$R_4 = 0.621083$ $\quad R_8 = 1.705574$

$$R_1 - \frac{N_1^{\,5} - 4 \cdot N_1^{\,4} \cdot N_2 + 6 \cdot N_1^{\,3} \cdot N_2^{\,2} - 4 \cdot N_1^{\,2} \cdot N_2^{\,3} + N_1 \cdot N_2^{\,4}}{N_2^{\,4}} = 0$$

$$R_8 - \frac{N_1 \cdot N_2^{\,4}}{N_1^{\,4} - 4 \cdot N_1^{\,3} \cdot N_2 + 6 \cdot N_1^{\,2} \cdot N_2^{\,2} - 4 \cdot N_1 \cdot N_2^{\,3} + N_2^{\,4}} = 0$$


N_1 = 1.09971
N_2 = 4.16200
R_1 = 0.32230
R_2 = 0.43804
R_3 = 0.59534
R_4 = 0.80914
R_5 = 1.49463
R_6 = 2.03137
R_7 = 2.76086
R_8 = 3.75232
A
R_1
R_2
R_3
R_4
C
N_1
R_5
R_6
R_7
R_8
N_2
E
B
D
F
$\frac{N_2}{N_2-N_1}$ = 1.35911
$R_1-N_1\cdot\frac{N_2}{N_2-N_1}^{-4}$ = 0.00000
$R_2-N_1\cdot\frac{N_2}{N_2-N_1}^{-3}$ = 0.00000
$R_3-N_1\cdot\frac{N_2}{N_2-N_1}^{-2}$ = 0.00000
$R_4-N_1\cdot\frac{N_2}{N_2-N_1}^{-1}$ = 0.00000
$R_5-N_1\cdot\frac{N_2}{N_2-N_1}$ = 0.00000
$R_6-N_1\cdot\frac{N_2}{N_2-N_1}^{2}$ = 0.00000
$R_7-N_1\cdot\frac{N_2}{N_2-N_1}^{3}$ = 0.00000
$R_8-N_1\cdot\frac{N_2}{N_2-N_1}^{4}$ = 0.00000

Exponential Series Notebook 5B

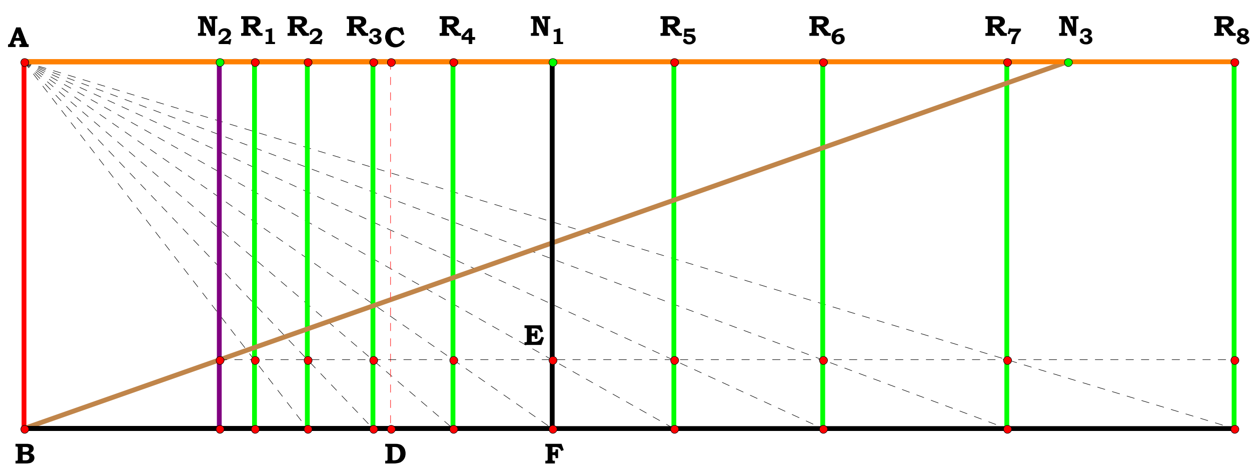
$AB := 1$

$N_1 := 1.43905$

$N_2 := .53230$

$N_3 := 2.84342$

$N_1 = 1.43905$
$N_2 = 0.53230$
$N_3 = 2.84342$
$R_1 = 0.62806$
$R_2 = 0.77272$
$R_3 = 0.95069$
$R_4 = 1.16966$
$R_5 = 1.77050$
$R_6 = 2.17828$
$R_7 = 2.67998$
$R_8 = 3.29724$



$$EF := \frac{N_2}{N_3}$$

$R_4 := N_1 \cdot (1 - EF) \qquad R_3 := R_4 \cdot (1 - EF)$

$R_2 := R_3 \cdot (1 - EF) \qquad R_1 := R_2 \cdot (1 - EF)$

$$R_5 := \frac{N_1}{(1 - EF)} \qquad R_6 := \frac{R_5}{(1 - EF)} \qquad R_7 := \frac{R_6}{(1 - EF)} \qquad R_8 := \frac{R_7}{(1 - EF)}$$

$$R_1 - N_1 \cdot \left(\frac{N_3}{N_3 - N_2}\right)^{-4} = 0 \qquad R_2 - N_1 \cdot \left(\frac{N_3}{N_3 - N_2}\right)^{-3} = 0 \qquad R_3 - N_1 \cdot \left(\frac{N_3}{N_3 - N_2}\right)^{-2} = 0 \qquad R_4 - N_1 \cdot \left(\frac{N_3}{N_3 - N_2}\right)^{-1} = 0$$

$$N_1 - N_1 \cdot \left(\frac{N_3}{N_3 - N_2}\right)^{0} = 0$$

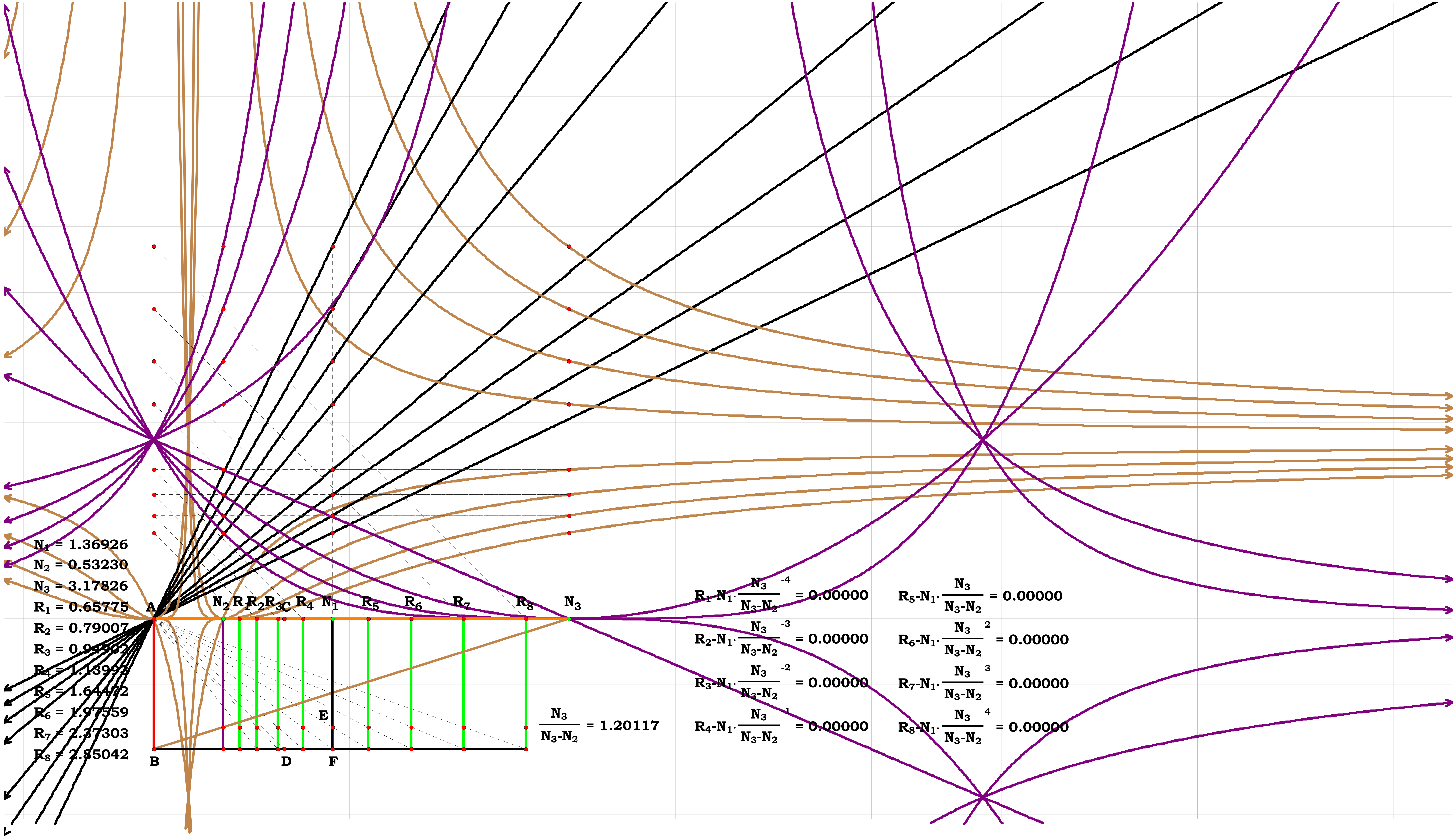
$$R_5 - N_1 \cdot \left(\frac{N_3}{N_3 - N_2}\right)^{1} = 0 \qquad R_6 - N_1 \cdot \left(\frac{N_3}{N_3 - N_2}\right)^{2} = 0 \qquad R_7 - N_1 \cdot \left(\frac{N_3}{N_3 - N_2}\right)^{3} = 0 \qquad R_8 - N_1 \cdot \left(\frac{N_3}{N_3 - N_2}\right)^{4} = 0$$

$R_1 = 0.628061$
$R_2 = 0.772717$
$R_3 = 0.95069$
$R_4 = 1.169654$

$R_5 = 1.770494$
$R_6 = 2.178276$
$R_7 = 2.679979$
$R_8 = 3.297235$

$$R_1 - \frac{N_1 \cdot N_2^{\,4} - 4 \cdot N_1 \cdot N_2^{\,3} \cdot N_3 + 6 \cdot N_1 \cdot N_2^{\,2} \cdot N_3^{\,2} - 4 \cdot N_1 \cdot N_2 \cdot N_3^{\,3} + N_1 \cdot N_3^{\,4}}{N_3^{\,4}} = 0$$

$$R_8 - \frac{N_1 \cdot N_3^{\,4}}{N_2^{\,4} - 4 \cdot N_2^{\,3} \cdot N_3 + 6 \cdot N_2^{\,2} \cdot N_3^{\,2} - 4 \cdot N_2 \cdot N_3^{\,3} + N_3^{\,4}} = 0$$


$N_1 = 1.36926$
$N_2 = 0.53230$
$N_3 = 3.17826$
$R_1 = 0.65775$
$R_2 = 0.79007$
$R_3 = 0.94902$
$R_4 = 1.13993$
$R_5 = 1.64472$
$R_6 = 1.97559$
$R_7 = 2.37303$
$R_8 = 2.85042$
A
N_2
R_1
R_2
R_3
C
R_4
N_1
R_5
R_6
R_7
R_8
N_3
E
B
D
F
$\frac{N_3}{N_3-N_2} = 1.20117$
$R_1-N_1\cdot\frac{N_3}{N_3-N_2}^{-4} = 0.00000$
$R_2-N_1\cdot\frac{N_3}{N_3-N_2}^{-3} = 0.00000$
$R_3-N_1\cdot\frac{N_3}{N_3-N_2}^{-2} = 0.00000$
$R_4-N_1\cdot\frac{N_3}{N_3-N_2}^{-1} = 0.00000$
$R_5-N_1\cdot\frac{N_3}{N_3-N_2} = 0.00000$
$R_6-N_1\cdot\frac{N_3}{N_3-N_2}^{2} = 0.00000$
$R_7-N_1\cdot\frac{N_3}{N_3-N_2}^{3} = 0.00000$
$R_8-N_1\cdot\frac{N_3}{N_3-N_2}^{4} = 0.00000$

Zero from bottom then top.

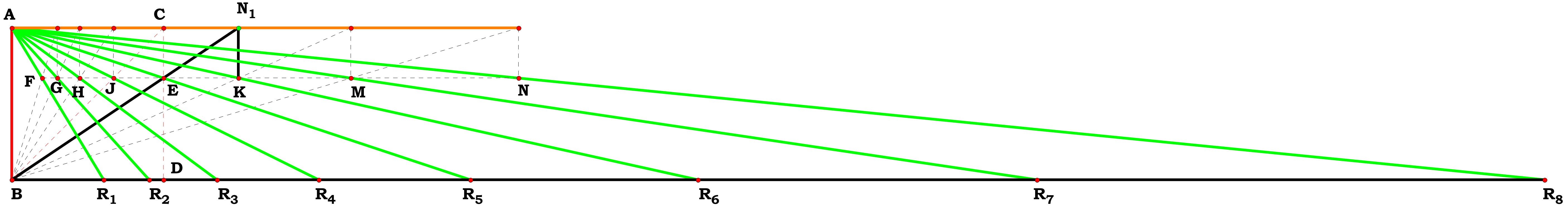
Exponential Series Notebook 1C

$AB := 1$

$N_1 := 1.49462$

$N_1 = 1.49462$
$R_1 = 0.60553$
$R_2 = 0.90503$
$R_3 = 1.35268$
$R_4 = 2.02175$
$R_5 = 3.02175$
$R_6 = 4.51637$
$R_7 = 6.75026$
$R_8 = 10.08909$

As the entire C section of this notebook is done in the same manner, I have elected, at this time, to demonstate one plate and leave off the rest. One simply uses the A plates adding the ratio.



From 1A.

F = 0.20039
G = 0.29951
H = 0.44765
J = 0.66907
E = 1.00000

$N_1^{-4} = 0.20039$

$N_1^{-3} = 0.299507$

$N_1^{-2} = 0.44765$

$N_1^{-1} = 0.669066$

$$DE := \frac{1}{N_1}$$

$$R_1 := N_1^{-4} \cdot \frac{N_1}{N_1 - 1} \quad R_2 := N_1^{-3} \cdot \frac{N_1}{N_1 - 1} \quad R_3 := N_1^{-2} \cdot \frac{N_1}{N_1 - 1} \quad R_4 := N_1^{-1} \cdot \frac{N_1}{N_1 - 1}$$

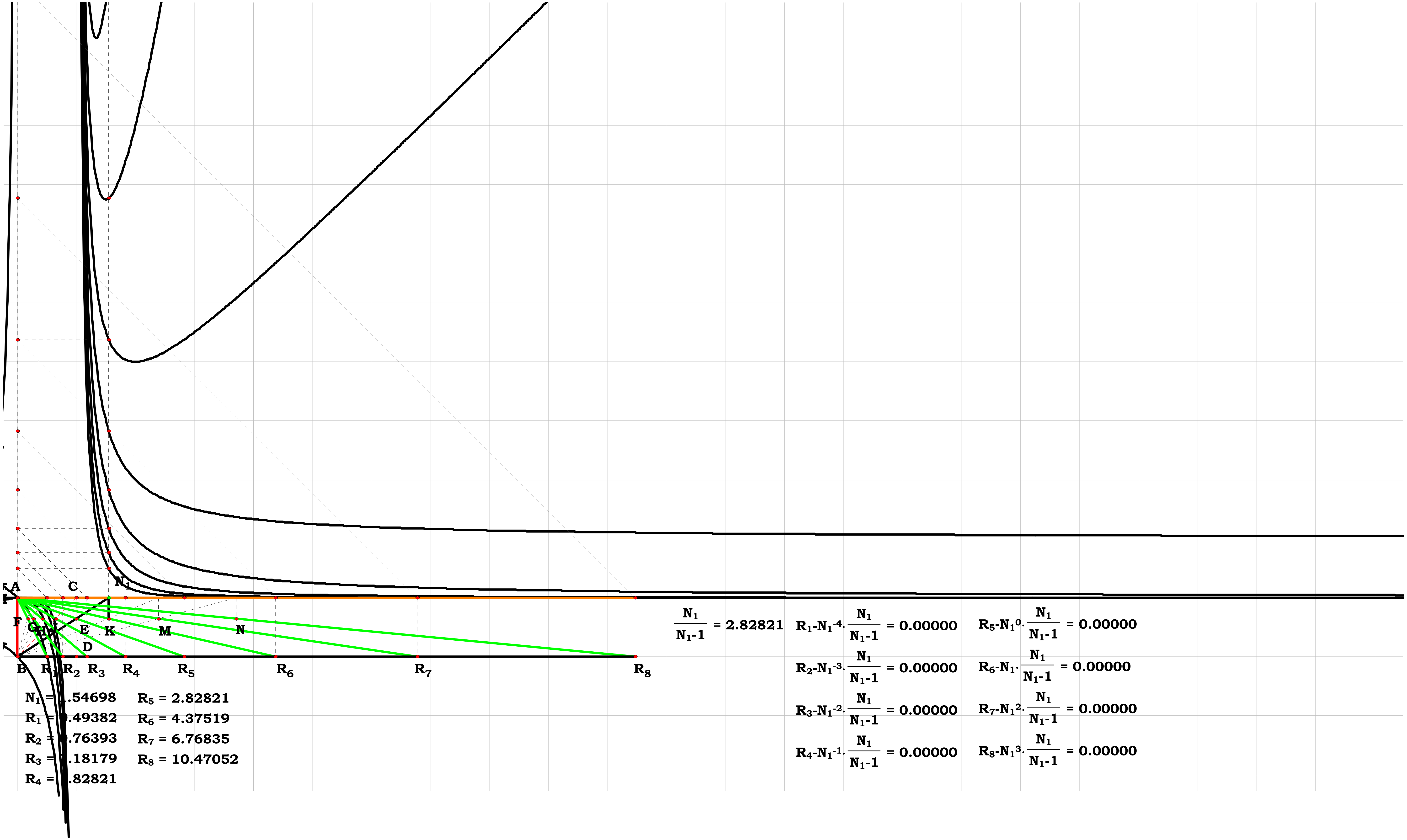
$$R_5 := N_1^{0} \cdot \frac{N_1}{N_1 - 1} \quad R_6 := N_1^{1} \cdot \frac{N_1}{N_1 - 1} \quad R_7 := N_1^{2} \cdot \frac{N_1}{N_1 - 1} \quad R_8 := N_1^{3} \cdot \frac{N_1}{N_1 - 1}$$

$R_1 = 0.60553$
$R_2 = 0.905038$
$R_3 = 1.352688$
$R_4 = 2.021754$

$R_5 = 3.021754$
$R_6 = 4.516374$
$R_7 = 6.750263$
$R_8 = 10.089078$

$$R_1 - \frac{1}{N_1^{4} - N_1^{3}} = 0$$

$$R_8 - \frac{N_1^{4}}{N_1 - 1} = 0$$



$N_1 = 1.54698$
$R_1 = 0.49382$
$R_2 = 0.76393$
$R_3 = 1.18179$
$R_4 = 1.82821$
$R_5 = 2.82821$
$R_6 = 4.37519$
$R_7 = 6.76835$
$R_8 = 10.47052$

$\frac{N_1}{N_1-1} = 2.82821$

$R_1 - N_1^{-4} \cdot \frac{N_1}{N_1-1} = 0.00000$

$R_2 - N_1^{-3} \cdot \frac{N_1}{N_1-1} = 0.00000$

$R_3 - N_1^{-2} \cdot \frac{N_1}{N_1-1} = 0.00000$

$R_4 - N_1^{-1} \cdot \frac{N_1}{N_1-1} = 0.00000$

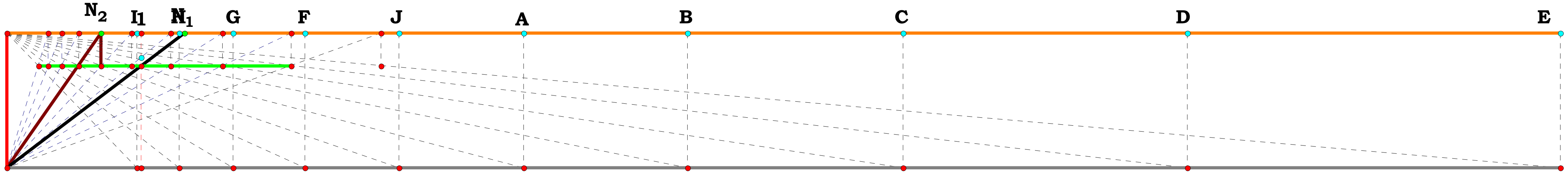
$R_5 - N_1^{0} \cdot \frac{N_1}{N_1-1} = 0.00000$

$R_6 - N_1 \cdot \frac{N_1}{N_1-1} = 0.00000$

$R_7 - N_1^{2} \cdot \frac{N_1}{N_1-1} = 0.00000$

$R_8 - N_1^{3} \cdot \frac{N_1}{N_1-1} = 0.00000$

Exponential Series Notebook 2C



$N_1 = 1.31693$

$N_2 = 0.70206$

$\frac{N_1 \cdot N_2}{N_1 - 1} = 2.91723$

J = 2.91723
A = 3.84179
B = 5.05937
C = 6.66284
D = 8.77451
E = 11.55542
F = 2.21517
G = 1.68207
H = 1.27727
I = 0.96988

$N_1^0 \cdot \frac{N_1 \cdot N_2}{N_1 - 1} - J = 0.00000$

$N_1^1 \cdot \frac{N_1 \cdot N_2}{N_1 - 1} - A = 0.00000$

$N_1^2 \cdot \frac{N_1 \cdot N_2}{N_1 - 1} - B = 0.00000$

$N_1^3 \cdot \frac{N_1 \cdot N_2}{N_1 - 1} - C = 0.00000$

$N_1^4 \cdot \frac{N_1 \cdot N_2}{N_1 - 1} - D = 0.00000$

$N_1^5 \cdot \frac{N_1 \cdot N_2}{N_1 - 1} - E = 0.00000$

$N_1^{-1} \cdot \frac{N_1 \cdot N_2}{N_1 - 1} - F = 0.00000$

$N_1^{-2} \cdot \frac{N_1 \cdot N_2}{N_1 - 1} - G = 0.00000$

$N_1^{-3} \cdot \frac{N_1 \cdot N_2}{N_1 - 1} - H = 0.00000$

$N_1^{-4} \cdot \frac{N_1 \cdot N_2}{N_1 - 1} - I = 0.00000$

$\frac{N_1 \cdot N_2}{N_1 - 1} - J = 0.00000$

$\frac{N_1^2 \cdot N_2}{N_1 - 1} - A = 0.00000$

$\frac{N_1^3 \cdot N_2}{N_1 - 1} - B = 0.00000$

$\frac{N_1^4 \cdot N_2}{N_1 - 1} - C = 0.00000$

$\frac{N_1^5 \cdot N_2}{N_1 - 1} - D = 0.00000$

$\frac{N_1^6 \cdot N_2}{N_1 - 1} - E = 0.00000$

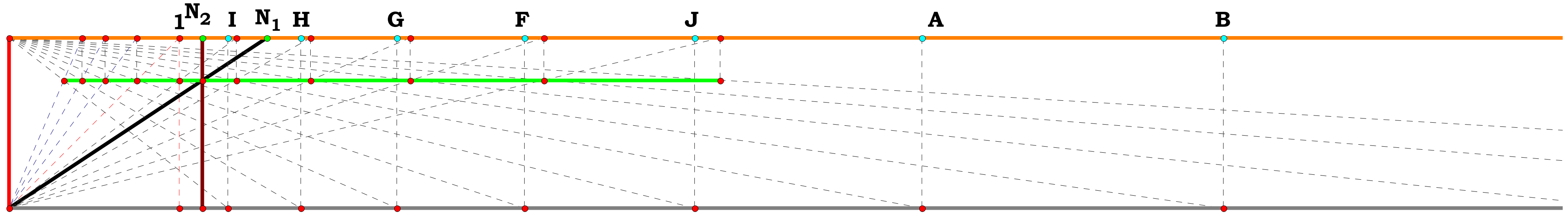
$\frac{N_2}{N_1 - 1} - F = 0.00000$

$\frac{N_2}{N_1^2 - N_1} - G = 0.00000$

$\frac{N_2}{N_1^3 - N_1^2} - H = 0.00000$

$\frac{N_2}{N_1^4 - N_1^3} - I = 0.00000$

Exponential Series Notebook 3C



$N_1 = 1.51037$

$N_2 = 1.13509$

$\frac{N_1}{N_2} = 1.33062$

$\frac{N_1}{N_1-N_2} = 4.02464$

J = 4.02464

A = 5.35525

B = 7.12580

C = 9.48172

D = 12.61655

E = 16.78781

F = 3.02464

G = 2.27310

H = 1.70831

I = 1.28384

$\frac{N_1}{N_2}^{0}\cdot\frac{N_1}{N_1-N_2}-J = 0.00000$

$\frac{N_1}{N_2}^{1}\cdot\frac{N_1}{N_1-N_2}-A = 0.00000$

$\frac{N_1}{N_2}^{2}\cdot\frac{N_1}{N_1-N_2}-B = 0.00000$

$\frac{N_1}{N_2}^{3}\cdot\frac{N_1}{N_1-N_2}-C = 0.00000$

$\frac{N_1}{N_2}^{4}\cdot\frac{N_1}{N_1-N_2}-D = 0.00000$

$\frac{N_1}{N_2}^{5}\cdot\frac{N_1}{N_1-N_2}-E = 0.00000$

$\frac{N_1}{N_2}^{-1}\cdot\frac{N_1}{N_1-N_2}-F = 0.00000$

$\frac{N_1}{N_2}^{-2}\cdot\frac{N_1}{N_1-N_2}-G = 0.00000$

$\frac{N_1}{N_2}^{-3}\cdot\frac{N_1}{N_1-N_2}-H = 0.00000$

$\frac{N_1}{N_2}^{-4}\cdot\frac{N_1}{N_1-N_2}-I = 0.00000$

$\frac{N_1}{N_1-N_2}-J = 0.00000$

$\frac{N_1^2}{N_1\cdot N_2-N_2^2}-A = 0.00000$

$\frac{N_1^3}{N_1\cdot N_2^2-N_2^3}-B = 0.00000$

$\frac{N_1^4}{N_1\cdot N_2^3-N_2^4}-C = 0.00000$

$\frac{N_1^5}{N_1\cdot N_2^4-N_2^5}-D = 0.00000$

$\frac{N_1^6}{N_1\cdot N_2^5-N_2^6}-E = 0.00000$

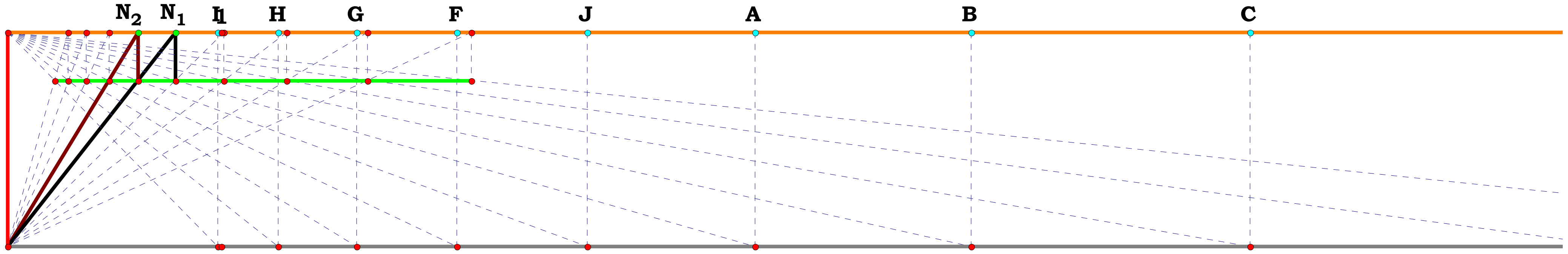
$\frac{N_2}{N_1-N_2}-F = 0.00000$

$\frac{N_2^2}{N_1^2-N_1\cdot N_2}-G = 0.00000$

$\frac{N_2^3}{N_1^3-N_1^2\cdot N_2}-H = 0.00000$

$\frac{N_2^4}{N_1^4-N_1^3\cdot N_2}-I = 0.00000$

Exponential Series Notebook 4C



$N_1 = 0.78415$

$N_2 = 0.60814$

$\frac{N_1}{N_2} = 1.28943$

$\frac{N_1\cdot N_2}{N_1-N_2} = 2.70928$

J = 2.70928
A = 3.49343
B = 4.50454
C = 5.80830
D = 7.48941
E = 9.65708
F = 2.10114
G = 1.62951
H = 1.26374
I = 0.98008

$\frac{N_1{}^{0}}{N_2}\cdot\frac{N_1\cdot N_2}{N_1-N_2}-J = 0.00000$

$\frac{N_1{}^{1}}{N_2}\cdot\frac{N_1\cdot N_2}{N_1-N_2}-A = 0.00000$

$\frac{N_1{}^{2}}{N_2}\cdot\frac{N_1\cdot N_2}{N_1-N_2}-B = 0.00000$

$\frac{N_1{}^{3}}{N_2}\cdot\frac{N_1\cdot N_2}{N_1-N_2}-C = 0.00000$

$\frac{N_1{}^{4}}{N_2}\cdot\frac{N_1\cdot N_2}{N_1-N_2}-D = 0.00000$

$\frac{N_1{}^{5}}{N_2}\cdot\frac{N_1\cdot N_2}{N_1-N_2}-E = 0.00000$

$\frac{N_1{}^{-1}}{N_2}\cdot\frac{N_1\cdot N_2}{N_1-N_2}-F = 0.00000$

$\frac{N_1{}^{-2}}{N_2}\cdot\frac{N_1\cdot N_2}{N_1-N_2}-G = 0.00000$

$\frac{N_1{}^{-3}}{N_2}\cdot\frac{N_1\cdot N_2}{N_1-N_2}-H = 0.00000$

$\frac{N_1{}^{-4}}{N_2}\cdot\frac{N_1\cdot N_2}{N_1-N_2}-I = 0.00000$

$\frac{N_1\cdot N_2}{N_1-N_2}-J = 0.00000$

$\frac{N_1^2}{N_1-N_2}-A = 0.00000$

$\frac{N_1^3}{N_1\cdot N_2-N_2^2}-B = 0.00000$

$\frac{N_1^4}{N_1\cdot N_2^2-N_2^3}-C = 0.00000$

$\frac{N_1^5}{N_1\cdot N_2^3-N_2^4}-D = 0.00000$

$\frac{N_1^6}{N_1\cdot N_2^4-N_2^5}-E = 0.00000$

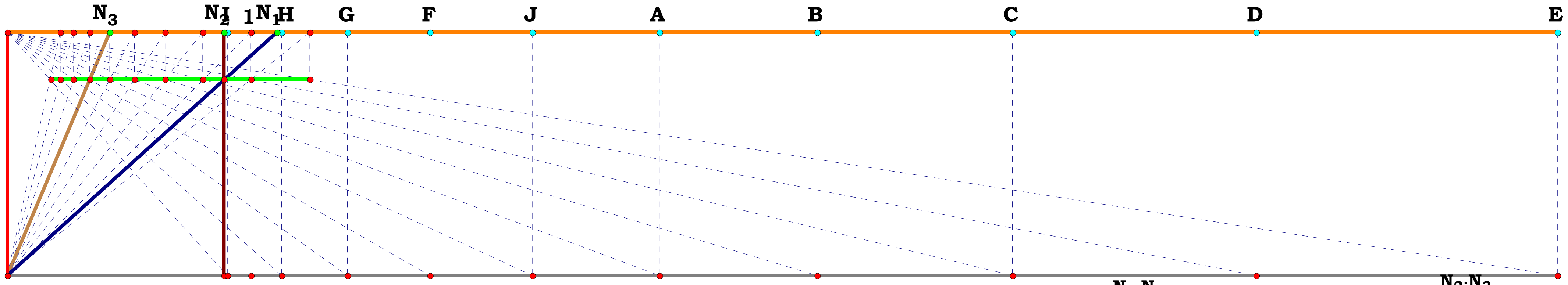
$\frac{N_2^2}{N_1-N_2}-F = 0.00000$

$\frac{N_2^3}{N_1^2-N_1\cdot N_2}-G = 0.00000$

$\frac{N_2^4}{N_1^3-N_1^2\cdot N_2}-H = 0.00000$

$\frac{N_2^5}{N_1^4-N_1^3\cdot N_2}-I = 0.00000$

Exponential Series Notebook 5C



$N_1 = 1.10350$

$N_2 = 0.88853$

$N_3 = 0.41903$

$$\frac{N_1}{N_2} = 1.24195$$

$$\frac{N_1 \cdot N_3}{N_1 - N_2} = 2.15096$$

J = 2.15096

A = 2.67138

B = 3.31772

C = 4.12043

D = 5.11735

E = 6.35548

F = 1.73193

G = 1.39453

H = 1.12286

I = 0.90411

$$\frac{N_1}{N_2}^0 \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - J = 0.00000$$

$$\frac{N_1}{N_2}^1 \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - A = 0.00000$$

$$\frac{N_1}{N_2}^2 \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - B = 0.00000$$

$$\frac{N_1}{N_2}^3 \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - C = 0.00000$$

$$\frac{N_1}{N_2}^4 \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - D = 0.00000$$

$$\frac{N_1}{N_2}^5 \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - E = 0.00000$$

$$\frac{N_1}{N_2}^{-1} \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - F = 0.00000$$

$$\frac{N_1}{N_2}^{-2} \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - G = 0.00000$$

$$\frac{N_1}{N_2}^{-3} \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - H = 0.00000$$

$$\frac{N_1}{N_2}^{-4} \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - I = 0.00000$$

$$\frac{N_1 \cdot N_3}{N_1 - N_2} - J = 0.00000$$

$$\frac{N_1^2 \cdot N_3}{N_1 \cdot N_2 - N_2^2} - A = 0.00000$$

$$\frac{N_1^3 \cdot N_3}{N_1 \cdot N_2^2 - N_2^3} - B = 0.00000$$

$$\frac{N_1^4 \cdot N_3}{N_1 \cdot N_2^3 - N_2^4} - C = 0.00000$$

$$\frac{N_1^5 \cdot N_3}{N_1 \cdot N_2^4 - N_2^5} - D = 0.00000$$

$$\frac{N_1^6 \cdot N_3}{N_1 \cdot N_2^5 - N_2^6} - E = 0.00000$$

$$\frac{N_2 \cdot N_3}{N_1 - N_2} - F = 0.00000$$

$$\frac{N_2^2 \cdot N_3}{N_1^2 - N_1 \cdot N_2} - G = 0.00000$$

$$\frac{N_2^3 \cdot N_3}{N_1^3 - N_1^2 \cdot N_2} - H = 0.00000$$

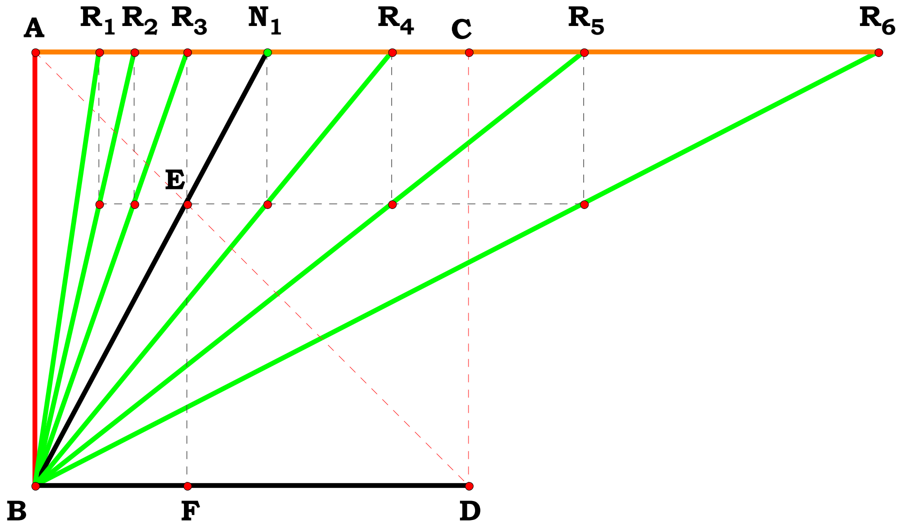
$$\frac{N_2^4 \cdot N_3}{N_1^4 - N_1^3 \cdot N_2} - I = 0.00000$$

$AB := 1$

$N_1 := .53608$

Exponential Series Notebook 2-1A

$N_1 = 0.53608$
$R_1 = 0.14791$
$R_2 = 0.22720$
$R_3 = 0.34899$
$R_4 = 0.82347$
$R_5 = 1.26492$
$R_6 = 1.94302$



$$R_3 := \frac{N_1}{N_1+1} \qquad R_2 := \frac{R_3}{N_1+1} \qquad R_1 := \frac{R_2}{N_1+1}$$

$$EF := \frac{1}{N_1+1}$$

$$R_4 := \frac{N_1}{EF} \qquad R_5 := \frac{R_4}{EF} \qquad R_6 := \frac{R_5}{EF} \qquad R_4 - N_1\cdot\left(N_1+1\right) = 0$$

$$R_1 - N_1\cdot\left(N_1+1\right)^{-3} = 0 \qquad R_2 - N_1\cdot\left(N_1+1\right)^{-2} = 0 \qquad R_3 - N_1\cdot\left(N_1+1\right)^{-1} = 0$$

$$R_4 - N_1\cdot\left(N_1+1\right)^{1} = 0 \qquad R_5 - N_1\cdot\left(N_1+1\right)^{2} = 0 \qquad R_6 - N_1\cdot\left(N_1+1\right)^{3} = 0$$

$R_1 = 0.147907$

$R_2 = 0.227197$

$R_3 = 0.348992$

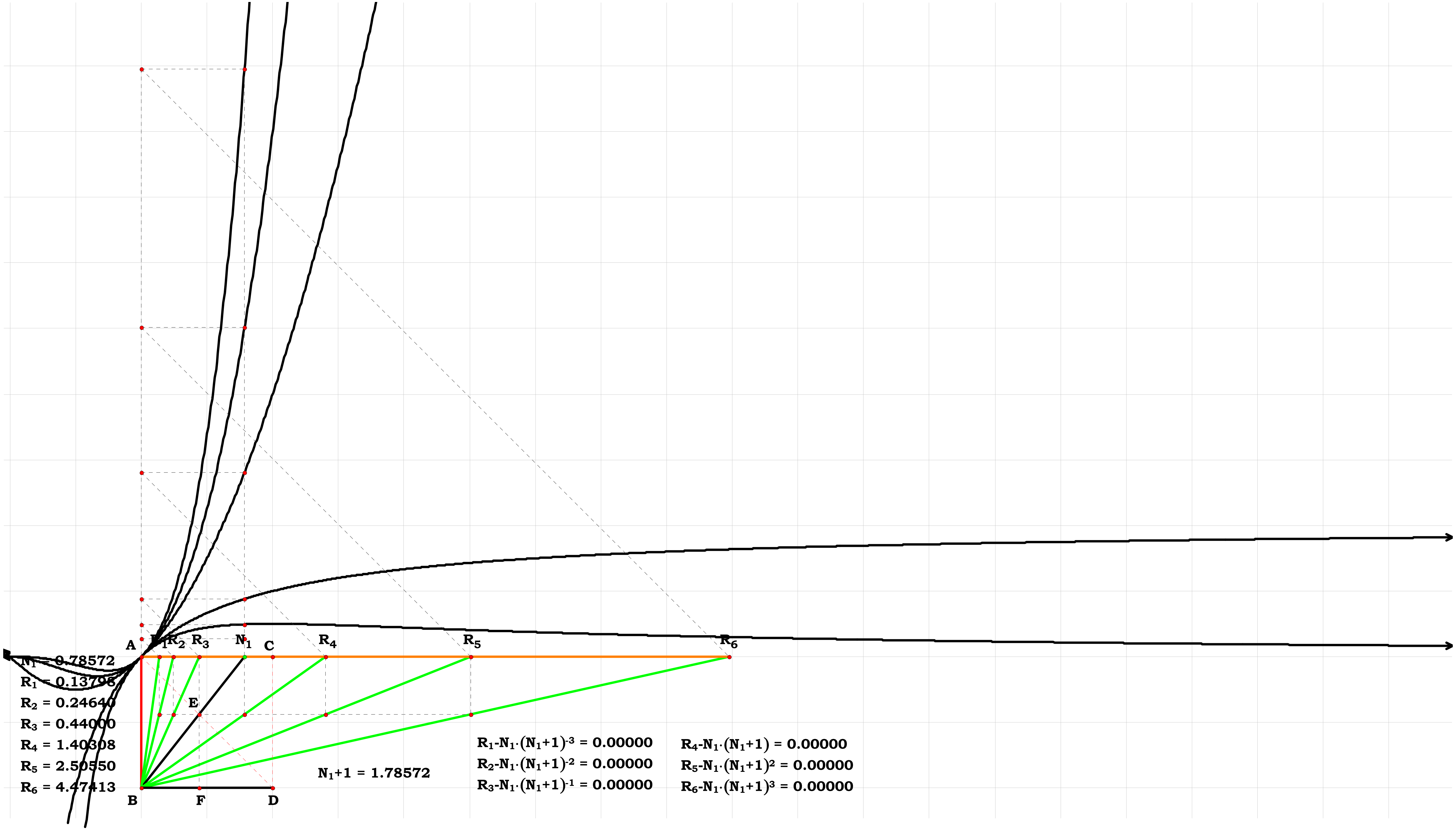
$R_4 = 0.823462$

$R_5 = 1.264903$

$R_6 = 1.942992$

$$R_1 - \frac{N_1}{{N_1}^3 + 3\cdot{N_1}^2 + 3\cdot N_1 + 1} = 0$$

$$R_6 - \left({N_1}^4 + 3\cdot{N_1}^3 + 3\cdot{N_1}^2 + N_1\right) = 0$$


A
R1
R2
R3
N1
C
R4
R5
R6
E
B
F
D
N1 = 0.78572
R1 = 0.13798
R2 = 0.24640
R3 = 0.44000
R4 = 1.40308
R5 = 2.50550
R6 = 4.47413
N1+1 = 1.78572
R1-N1·(N1+1)-3 = 0.00000
R2-N1·(N1+1)-2 = 0.00000
R3-N1·(N1+1)-1 = 0.00000
R4-N1·(N1+1) = 0.00000
R5-N1·(N1+1)2 = 0.00000
R6-N1·(N1+1)3 = 0.00000

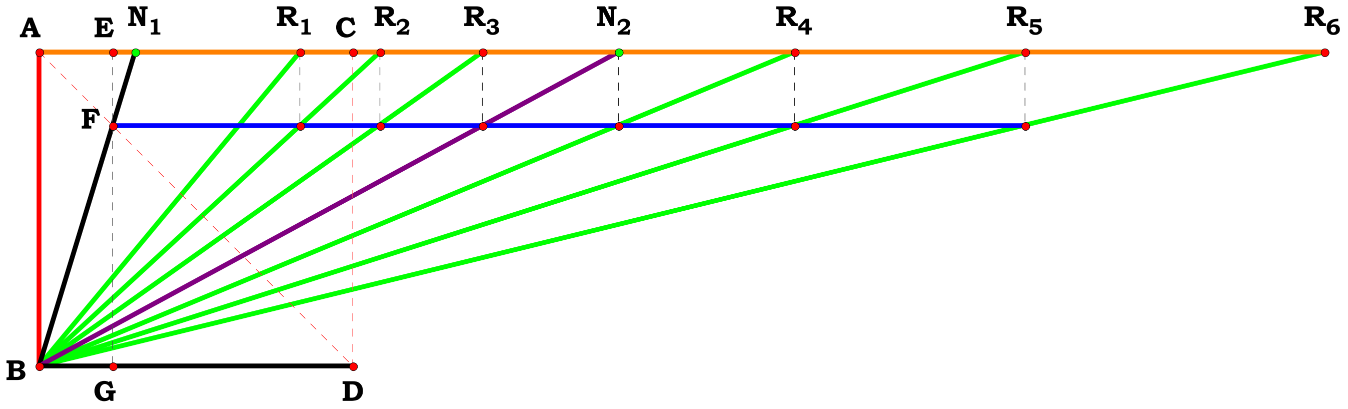
$AB := 1$

$N_1 := .30457$

$N_2 := 1.84332$

Exponential Series Notebook 2-2A

$N_1 = 0.30457$
$N_2 = 1.84332$
$R_1 = 0.83023$
$R_2 = 1.08309$
$R_3 = 1.41297$
$R_4 = 2.40473$
$R_5 = 3.13714$
$R_6 = 4.09261$



$$FG := \frac{1}{N_1 + 1}$$

$R_3 := N_2 \cdot FG \qquad R_2 := R_3 \cdot FG \qquad R_1 := R_2 \cdot FG$

$$R_4 := \frac{N_2}{FG} \qquad R_5 := \frac{R_4}{FG} \qquad R_6 := \frac{R_5}{FG}$$

$$R_3 - \frac{N_2}{N_1 + 1} = 0 \qquad R_4 - N_2 \cdot (N_1 + 1) = 0$$

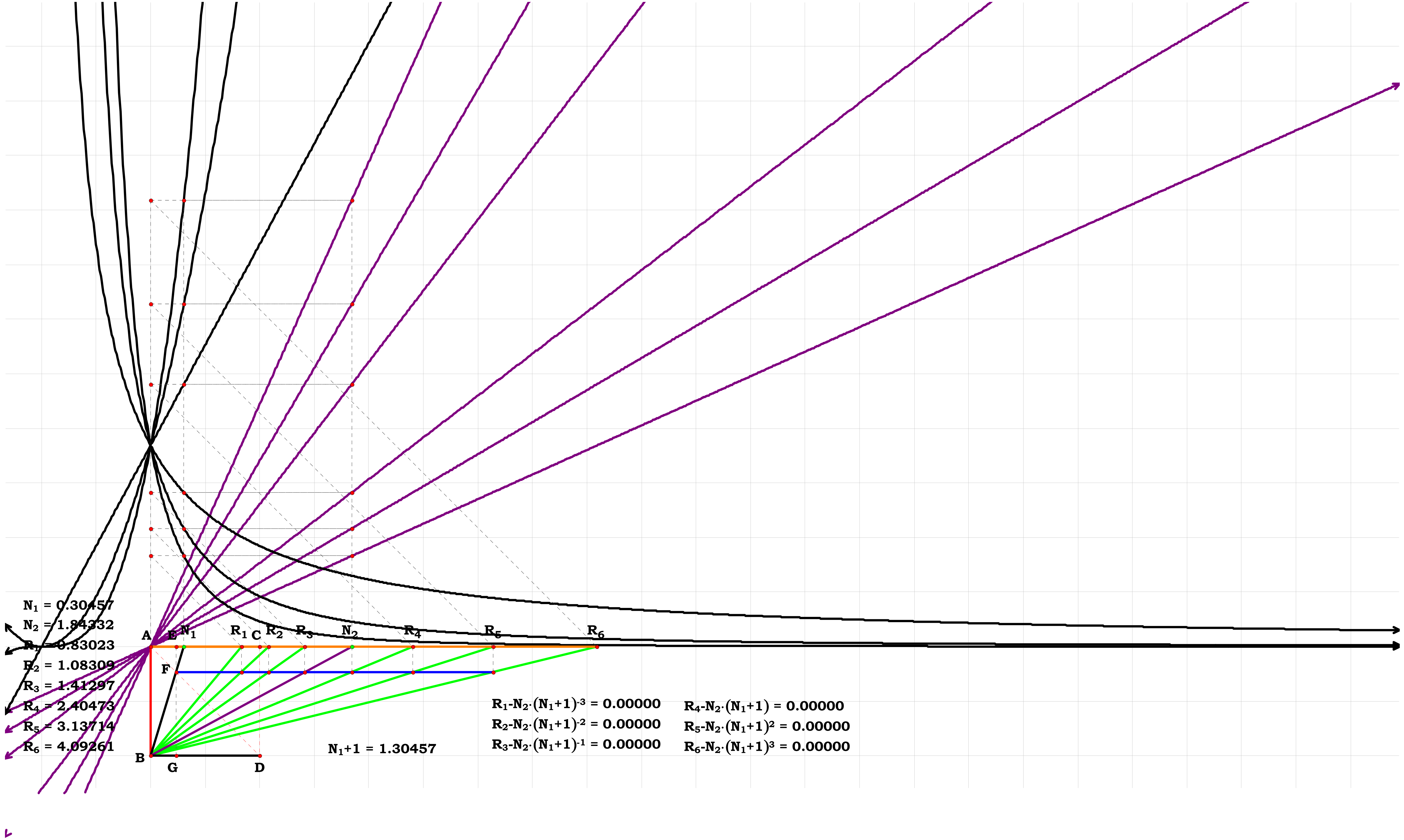
$R_1 - N_2 \cdot (N_1 + 1)^{-3} = 0 \qquad R_2 - N_2 \cdot (N_1 + 1)^{-2} = 0 \qquad R_3 - N_2 \cdot (N_1 + 1)^{-1} = 0$

$R_4 - N_2 \cdot (N_1 + 1) = 0 \qquad R_5 - N_2 \cdot (N_1 + 1)^{2} = 0 \qquad R_6 - N_2 \cdot (N_1 + 1)^{3} = 0$

$R_1 = 0.83023$
$R_2 = 1.083094$
$R_3 = 1.412971$
$R_4 = 2.40474$
$R_5 = 3.137152$
$R_6 = 4.092634$

$$R_1 - \frac{N_2}{N_1^{3} + 3 \cdot N_1^{2} + 3 \cdot N_1 + 1} = 0$$

$$R_6 - \left(N_2 \cdot N_1^{3} + 3 \cdot N_2 \cdot N_1^{2} + 3 \cdot N_2 \cdot N_1 + N_2\right) = 0$$


N₁ = 0.30457
N₂ = 1.84332
R₁ = 0.83023
R₂ = 1.08309
R₃ = 1.41297
R₄ = 2.40473
R₅ = 3.13714
R₆ = 4.09261
A
E
N₁
R₁
C
R₂
R₃
N₂
R₄
R₅
R₆
F
B
G
D
N₁+1 = 1.30457
R₁-N₂·(N₁+1)⁻³ = 0.00000
R₂-N₂·(N₁+1)⁻² = 0.00000
R₃-N₂·(N₁+1)⁻¹ = 0.00000
R₄-N₂·(N₁+1) = 0.00000
R₅-N₂·(N₁+1)² = 0.00000
R₆-N₂·(N₁+1)³ = 0.00000

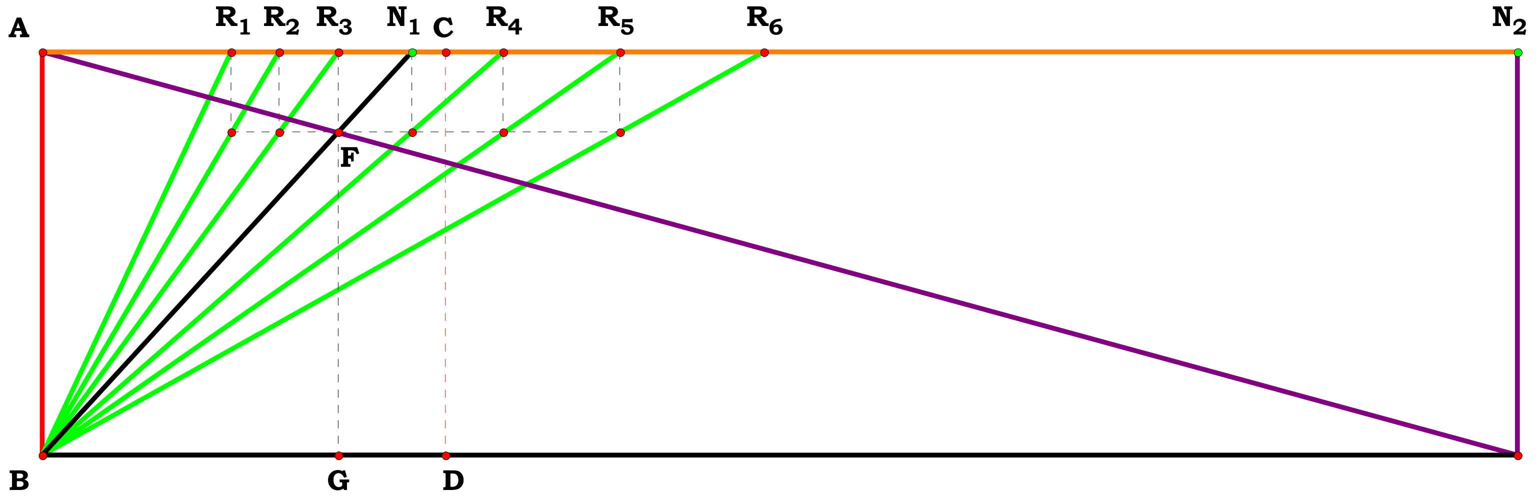
$AB := 1$

$N_1 := .91460$

$N_2 := 3.65482$

Exponential Series Notebook 2-3A

$N_1 = 0.91460$
$N_2 = 3.65482$
$R_1 = 0.46800$
$R_2 = 0.58511$
$R_3 = 0.73154$
$R_4 = 1.14348$
$R_5 = 1.42962$
$R_6 = 1.78738$



$$FG := \frac{N_2}{N_1 + N_2}$$

$$R_3 := N_1 \cdot FG \qquad R_2 := R_3 \cdot FG \qquad R_1 := R_2 \cdot FG$$

$$R_4 := \frac{N_1}{FG} \qquad R_5 := \frac{R_4}{FG} \qquad R_6 := \frac{R_5}{FG}$$

$$R_3 - \frac{N_1 \cdot N_2}{N_1 + N_2} = 0 \qquad R_4 - \frac{N_1 \cdot (N_1 + N_2)}{N_2} = 0$$

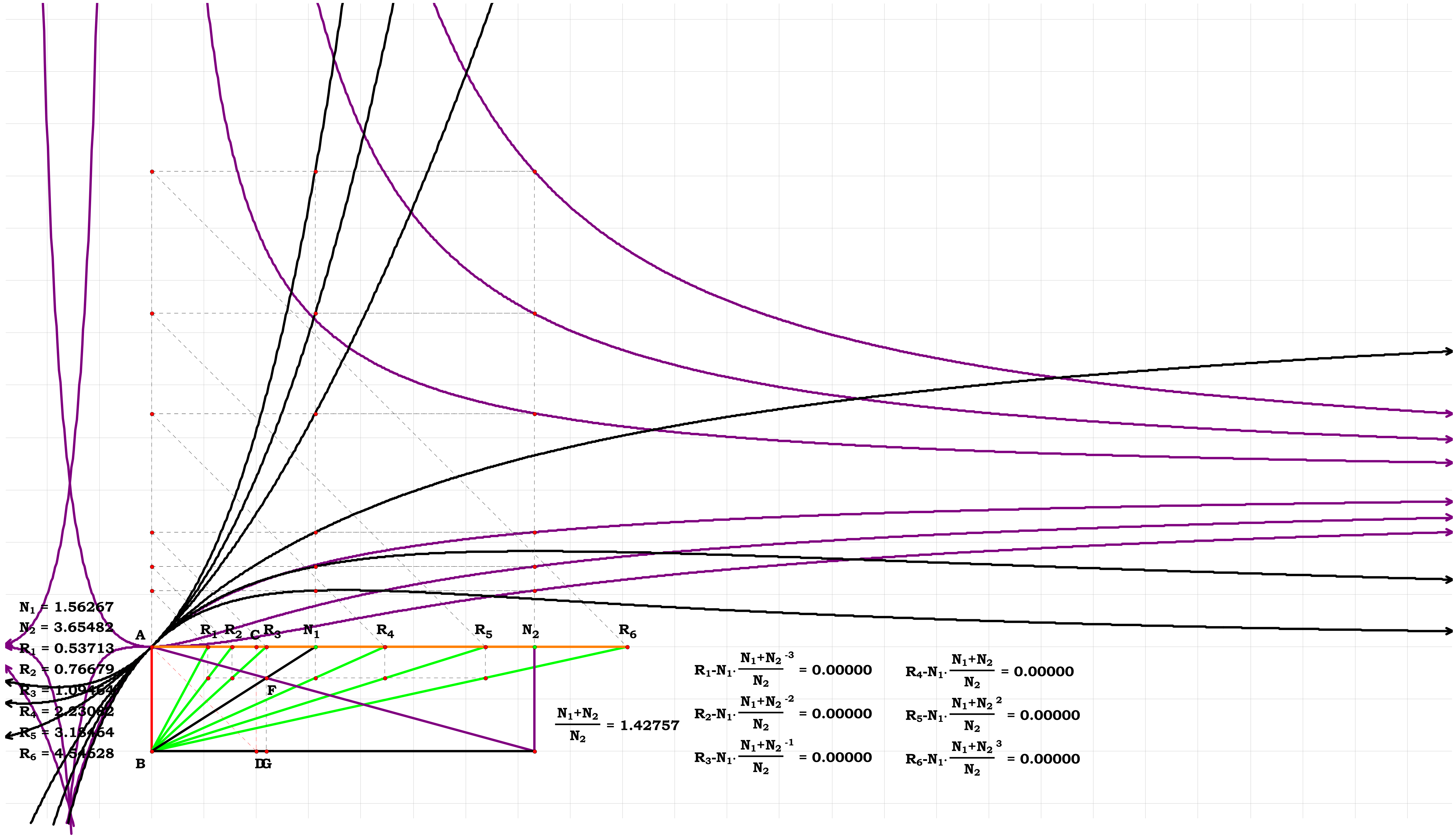
$$R_1 - N_1 \cdot \left(\frac{N_1 + N_2}{N_2}\right)^{-3} = 0 \qquad R_2 - N_1 \cdot \left(\frac{N_1 + N_2}{N_2}\right)^{-2} = 0 \qquad R_3 - N_1 \cdot \left(\frac{N_1 + N_2}{N_2}\right)^{-1} = 0$$

$$R_4 - N_1 \cdot \left(\frac{N_1 + N_2}{N_2}\right)^{1} = 0 \qquad R_5 - N_1 \cdot \left(\frac{N_1 + N_2}{N_2}\right)^{2} = 0 \qquad R_6 - N_1 \cdot \left(\frac{N_1 + N_2}{N_2}\right)^{3} = 0$$

$R_1 = 0.468$
$R_2 = 0.585115$
$R_3 = 0.731537$
$R_4 = 1.143474$
$R_5 = 1.429622$
$R_6 = 1.787378$

$$R_1 - \frac{N_1 \cdot {N_2}^3}{{N_1}^3 + 3 \cdot {N_1}^2 \cdot N_2 + 3 \cdot N_1 \cdot {N_2}^2 + {N_2}^3} = 0$$

$$R_6 - \frac{\left({N_1}^4 + 3 \cdot {N_1}^3 \cdot N_2 + 3 \cdot {N_1}^2 \cdot {N_2}^2 + N_1 \cdot {N_2}^3\right)}{{N_2}^3} = 0 \qquad R_6 - \left(N_1 + \frac{3 \cdot {N_1}^2}{N_2} + \frac{3 \cdot {N_1}^3}{{N_2}^2} + \frac{{N_1}^4}{{N_2}^3}\right) = 0$$


N_1 = 1.56267
N_2 = 3.65482
R_1 = 0.53713
R_2 = 0.76679
R_3 = 1.09464
R_4 = 2.23082
R_5 = 3.18464
R_6 = 4.54628
A
R_1
R_2
C
R_3
N_1
R_4
R_5
N_2
R_6
F
B
D
G
$\frac{N_1+N_2}{N_2} = 1.42757$
$R_1 - N_1 \cdot \frac{N_1+N_2}{N_2}^{-3} = 0.00000$
$R_2 - N_1 \cdot \frac{N_1+N_2}{N_2}^{-2} = 0.00000$
$R_3 - N_1 \cdot \frac{N_1+N_2}{N_2}^{-1} = 0.00000$
$R_4 - N_1 \cdot \frac{N_1+N_2}{N_2} = 0.00000$
$R_5 - N_1 \cdot \frac{N_1+N_2}{N_2}^{2} = 0.00000$
$R_6 - N_1 \cdot \frac{N_1+N_2}{N_2}^{3} = 0.00000$

Exponential Series Notebook 2-4A

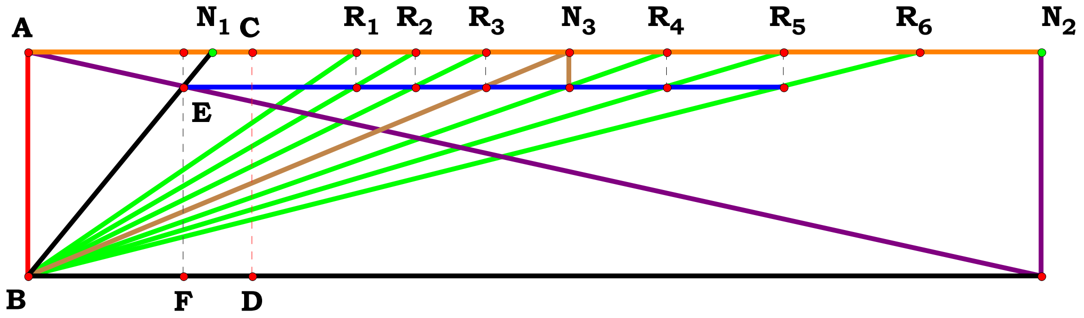
$AB := 1$

$N_1 := .81913$

$N_2 := 4.51670$

$N_3 := 2.41008$

$N_1 = 0.81913$
$N_2 = 4.51670$
$N_3 = 2.41008$
$R_1 = 1.46181$
$R_2 = 1.72692$
$R_3 = 2.04010$
$R_4 = 2.84716$
$R_5 = 3.36351$
$R_6 = 3.97350$



$$EF := \frac{N_2}{N_1 + N_2}$$

$$R_3 := N_3 \cdot EF \qquad R_2 := R_3 \cdot EF \qquad R_1 := R_2 \cdot EF$$

$$R_4 := \frac{N_3}{EF} \qquad R_5 := \frac{R_4}{EF} \qquad R_6 := \frac{R_5}{EF}$$

$$R_3 - \frac{N_2 \cdot N_3}{N_1 + N_2} = 0 \qquad R_4 - \frac{N_3 \cdot (N_1 + N_2)}{N_2} = 0$$

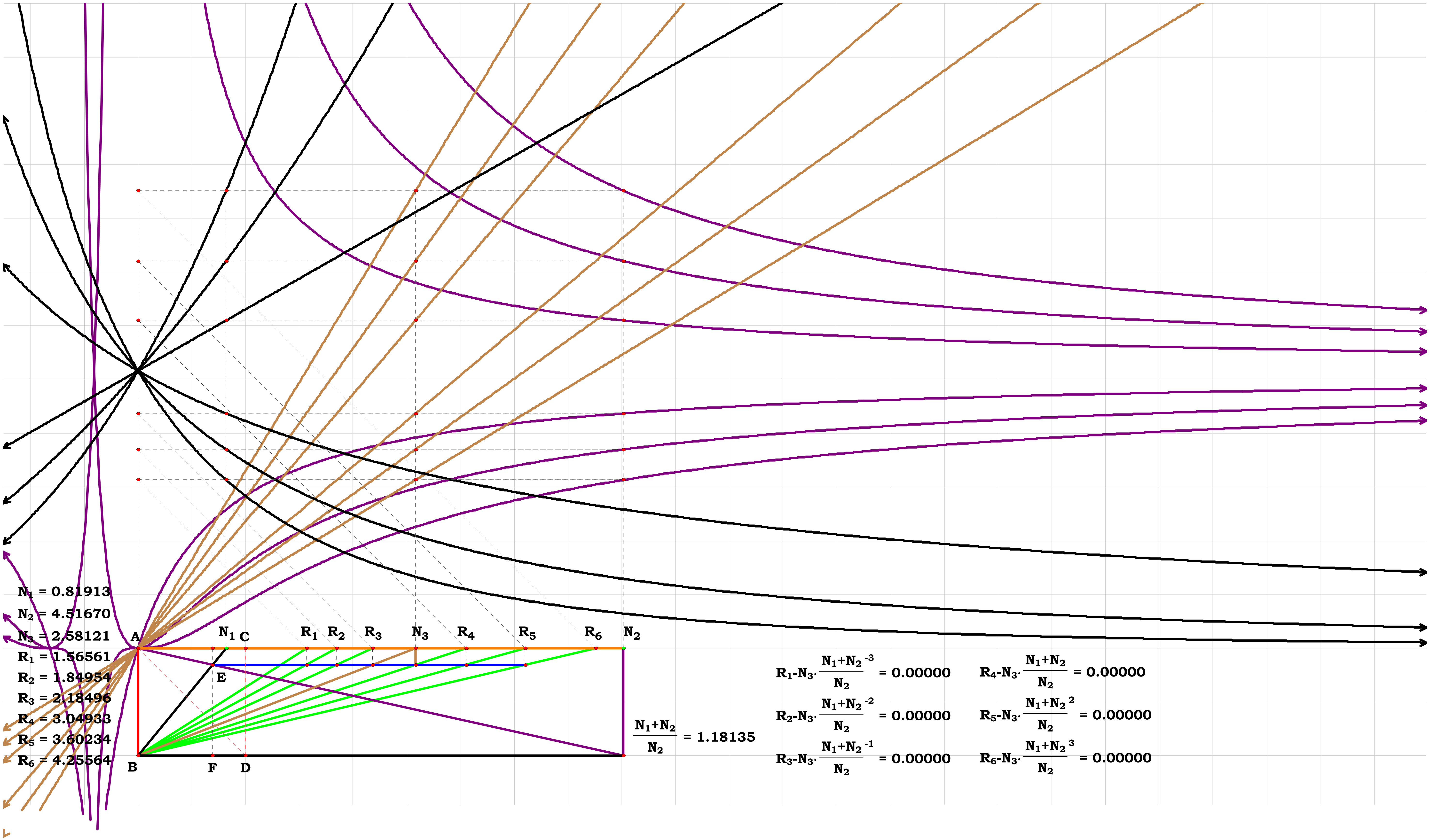
$$R_1 - N_3 \cdot \left(\frac{N_1 + N_2}{N_2}\right)^{-3} = 0 \qquad R_2 - N_3 \cdot \left(\frac{N_1 + N_2}{N_2}\right)^{-2} = 0 \qquad R_3 - N_3 \cdot \left(\frac{N_1 + N_2}{N_2}\right)^{-1} = 0$$

$$R_4 - N_3 \cdot \left(\frac{N_1 + N_2}{N_2}\right)^{1} = 0 \qquad R_5 - N_3 \cdot \left(\frac{N_1 + N_2}{N_2}\right)^{2} = 0 \qquad R_6 - N_3 \cdot \left(\frac{N_1 + N_2}{N_2}\right)^{3} = 0$$

$R_1 = 1.461804$
$R_2 = 1.726911$
$R_3 = 2.040097$
$R_4 = 2.847162$
$R_5 = 3.363512$
$R_6 = 3.973504$

$$R_1 - \frac{N_2^{\,3} \cdot N_3}{N_1^{\,3} + 3 \cdot N_1^{\,2} \cdot N_2 + 3 \cdot N_1 \cdot N_2^{\,2} + N_2^{\,3}} = 0$$

$$R_6 - \frac{N_3 \cdot N_1^{\,3} + 3 \cdot N_3 \cdot N_1^{\,2} \cdot N_2 + 3 \cdot N_3 \cdot N_1 \cdot N_2^{\,2} + N_3 \cdot N_2^{\,3}}{N_2^{\,3}} = 0$$

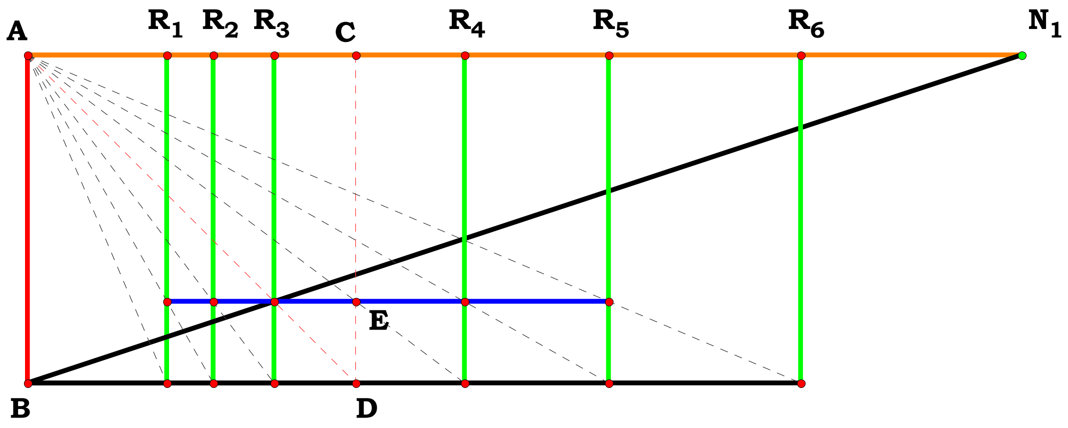

N_1 = 0.81913
N_2 = 4.51670
N_3 = 2.58121
R_1 = 1.56561
R_2 = 1.84954
R_3 = 2.18496
R_4 = 3.04933
R_5 = 3.60234
R_6 = 4.25564
A
N_1
C
R_1
R_2
R_3
N_3
R_4
R_5
R_6
N_2
E
B
F
D
$\frac{N_1+N_2}{N_2}$ = 1.18135
$R_1 - N_3 \cdot \frac{N_1+N_2}{N_2}^{-3}$ = 0.00000
$R_2 - N_3 \cdot \frac{N_1+N_2}{N_2}^{-2}$ = 0.00000
$R_3 - N_3 \cdot \frac{N_1+N_2}{N_2}^{-1}$ = 0.00000
$R_4 - N_3 \cdot \frac{N_1+N_2}{N_2}$ = 0.00000
$R_5 - N_3 \cdot \frac{N_1+N_2}{N_2}^{2}$ = 0.00000
$R_6 - N_3 \cdot \frac{N_1+N_2}{N_2}^{3}$ = 0.00000

$AB := 1$

$N_1 := 3.02713$

Exponential Series Notebook 2-1B

$N_1 = 3.02713$
$R_1 = 0.42472$
$R_2 = 0.56503$
$R_3 = 0.75168$
$R_4 = 1.33035$
$R_5 = 1.76982$
$R_6 = 2.35447$



$$DE := \frac{1}{N_1 + 1}$$

$$R_3 := 1 - DE \qquad R_2 := R_3 \cdot (1 - DE) \qquad R_1 := R_2 \cdot (1 - DE)$$

$$R_4 := \frac{1}{1 - DE} \qquad R_5 := \frac{R_4}{1 - DE} \qquad R_6 := \frac{R_5}{1 - DE}$$

$$R_3 - \frac{N_1}{N_1 + 1} = 0 \qquad R_4 - \frac{N_1 + 1}{N_1} = 0$$

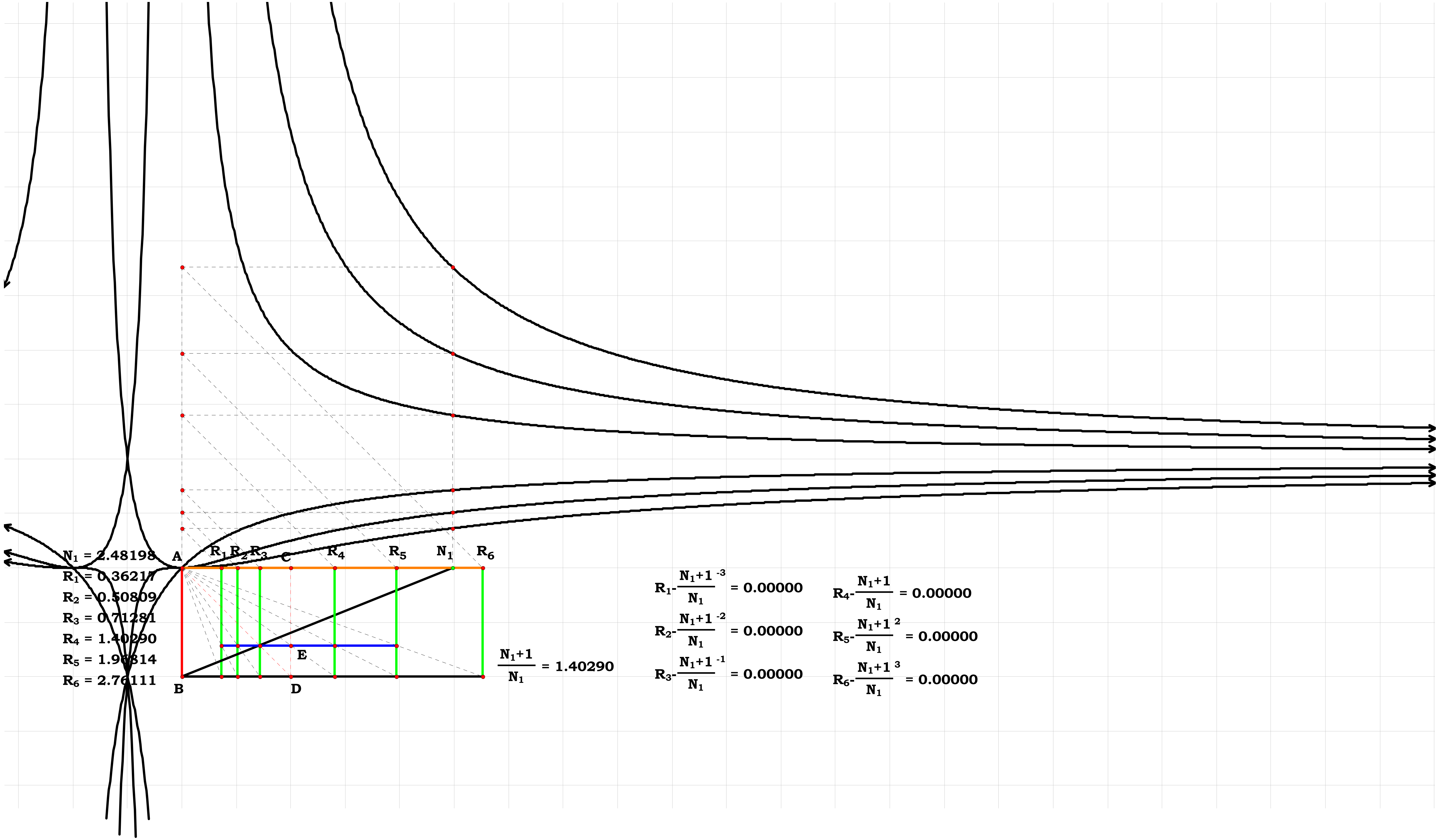
$$R_1 - \left(\frac{N_1 + 1}{N_1}\right)^{-3} = 0 \qquad R_2 - \left(\frac{N_1 + 1}{N_1}\right)^{-2} = 0 \qquad R_3 - \left(\frac{N_1 + 1}{N_1}\right)^{-1} = 0$$

$$R_4 - \left(\frac{N_1 + 1}{N_1}\right)^{1} = 0 \qquad R_5 - \left(\frac{N_1 + 1}{N_1}\right)^{2} = 0 \qquad R_6 - \left(\frac{N_1 + 1}{N_1}\right)^{3} = 0$$

$R_1 = 0.424723$
$R_2 = 0.565029$
$R_3 = 0.751684$
$R_4 = 1.330346$
$R_5 = 1.76982$
$R_6 = 2.354473$

$$R_1 - \frac{N_1^{\,3}}{N_1^{\,3} + 3 \cdot N_1^{\,2} + 3 \cdot N_1 + 1} = 0$$

$$R_6 - \left(\frac{3}{N_1} + \frac{3}{N_1^{\,2}} + \frac{1}{N_1^{\,3}} + 1\right) = 0 \qquad R_6 - \frac{N_1^{\,3} + 3 \cdot N_1^{\,2} + 3 \cdot N_1 + 1}{N_1^{\,3}} = 0$$



N_1 = 2.48198
R_1 = 0.36217
R_2 = 0.50809
R_3 = 0.71281
R_4 = 1.40290
R_5 = 1.96814
R_6 = 2.76111
A
B
C
D
E
R_1
R_2
R_3
R_4
R_5
N_1
R_6
$\frac{N_1+1}{N_1}$ = 1.40290
$R_1 - \frac{N_1+1}{N_1}^{-3}$ = 0.00000
$R_2 - \frac{N_1+1}{N_1}^{-2}$ = 0.00000
$R_3 - \frac{N_1+1}{N_1}^{-1}$ = 0.00000
$R_4 - \frac{N_1+1}{N_1}$ = 0.00000
$R_5 - \frac{N_1+1}{N_1}^{2}$ = 0.00000
$R_6 - \frac{N_1+1}{N_1}^{3}$ = 0.00000

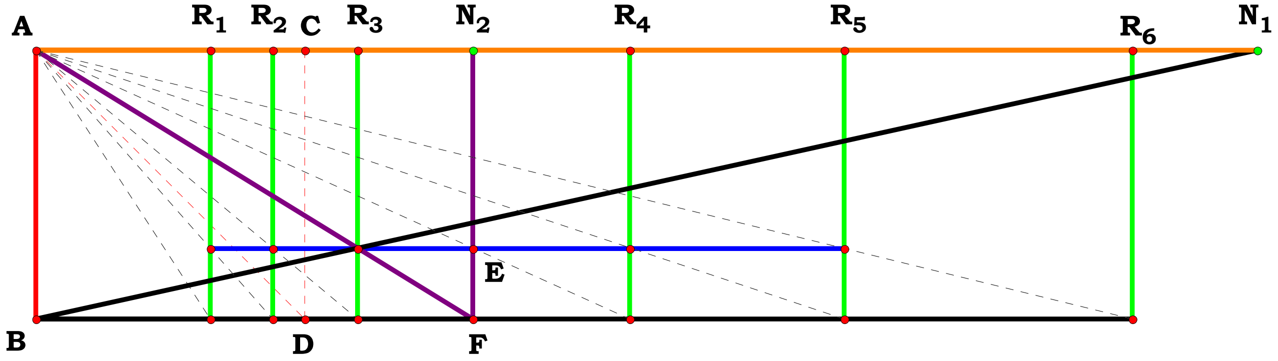
Exponential Series Notebook 2-2B

$AB := 1$

$N_1 := 4.53648$

$N_2 := 1.62541$

$N_1 = 4.53658$
$N_2 = 1.62541$
$R_1 = 0.64861$
$R_2 = 0.88101$
$R_3 = 1.19666$
$R_4 = 2.20778$
$R_5 = 2.99881$
$R_6 = 4.07326$



$$EF := \frac{N_2}{N_1 + N_2}$$

$$R_3 := N_2 \cdot (1 - EF) \qquad R_2 := R_3 \cdot (1 - EF) \qquad R_1 := R_2 \cdot (1 - EF)$$

$$R_4 := \frac{N_2}{(1 - EF)} \qquad R_5 := \frac{R_4}{(1 - EF)} \qquad R_6 := \frac{R_5}{(1 - EF)}$$

$$R_3 - \frac{N_1 \cdot N_2}{N_1 + N_2} = 0 \qquad R_4 - \frac{N_2 \cdot (N_1 + N_2)}{N_1} = 0$$

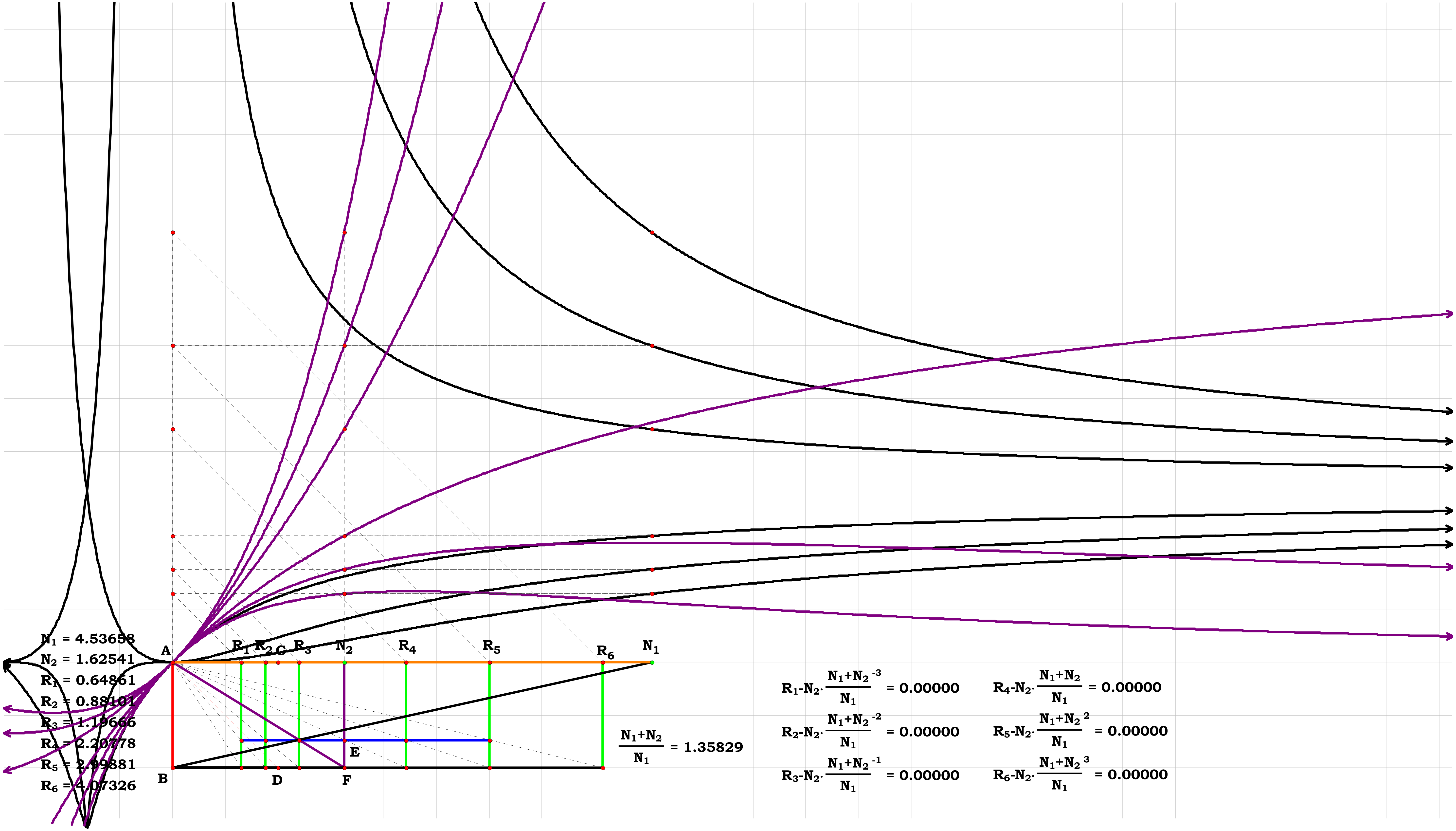
$$R_1 - N_2 \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{-3} = 0 \qquad R_2 - N_2 \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{-2} = 0 \qquad R_3 - N_2 \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{-1} = 0$$

$$R_4 - N_2 \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{1} = 0 \qquad R_5 - N_2 \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{2} = 0 \qquad R_6 - N_2 \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{3} = 0$$

$R_1 = 0.648602$
$R_2 = 0.880994$
$R_3 = 1.196652$
$R_4 = 2.207791$
$R_5 = 2.998837$
$R_6 = 4.073313$

$$R_1 - \frac{N_1^{\,3} \cdot N_2}{N_1^{\,3} + 3 \cdot N_1^{\,2} \cdot N_2 + 3 \cdot N_1 \cdot N_2^{\,2} + N_2^{\,3}} = 0$$

$$R_6 - \frac{N_1^{\,3} \cdot N_2 + 3 \cdot N_1^{\,2} \cdot N_2^{\,2} + 3 \cdot N_1 \cdot N_2^{\,3} + N_2^{\,4}}{N_1^{\,3}} = 0$$


$N_1 = 4.53658$
$N_2 = 1.62541$
$R_1 = 0.64861$
$R_2 = 0.88101$
$R_3 = 1.19666$
$R_4 = 2.20778$
$R_5 = 2.99881$
$R_6 = 4.07326$
A
R_1
R_2
C
R_3
N_2
R_4
R_5
R_6
N_1
E
B
D
F
$\frac{N_1+N_2}{N_1} = 1.35829$
$R_1 - N_2 \cdot \frac{N_1+N_2}{N_1}^{-3} = 0.00000$
$R_2 - N_2 \cdot \frac{N_1+N_2}{N_1}^{-2} = 0.00000$
$R_3 - N_2 \cdot \frac{N_1+N_2}{N_1}^{-1} = 0.00000$
$R_4 - N_2 \cdot \frac{N_1+N_2}{N_1} = 0.00000$
$R_5 - N_2 \cdot \frac{N_1+N_2}{N_1}^{2} = 0.00000$
$R_6 - N_2 \cdot \frac{N_1+N_2}{N_1}^{3} = 0.00000$

Exponential Series Notebook 2-3B

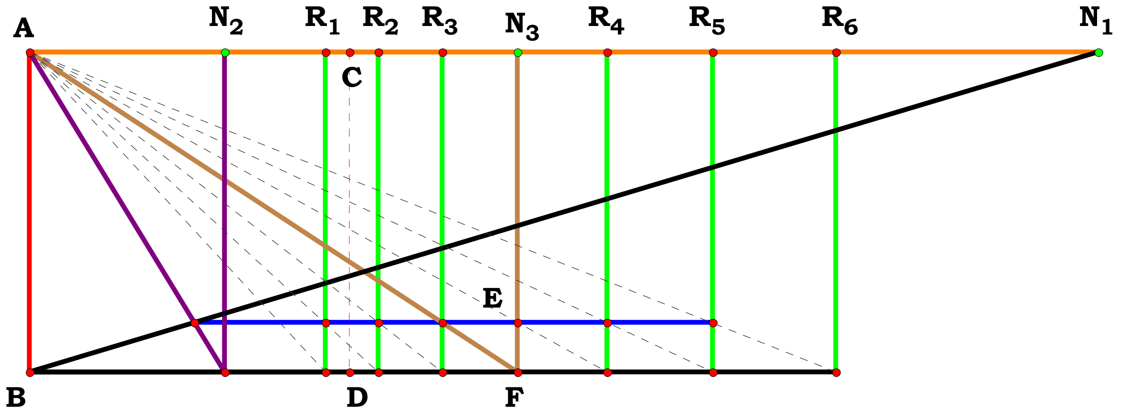
$AB := 1$

$N_1 := 3.33571$

$N_2 := .60841$

$N_3 := 1.52355$

$N_1 = 3.33571$
$N_2 = 0.60841$
$N_3 = 1.52355$
$R_1 = 0.92166$
$R_2 = 1.08976$
$R_3 = 1.28853$
$R_4 = 1.80143$
$R_5 = 2.13000$
$R_6 = 2.51849$



$$EF := \frac{N_2}{N_1 + N_2}$$

$$R_3 := N_3 \cdot (1 - EF) \qquad R_2 := R_3 \cdot (1 - EF) \qquad R_1 := R_2 \cdot (1 - EF)$$

$$R_4 := \frac{N_3}{(1 - EF)} \qquad R_5 := \frac{R_4}{(1 - EF)} \qquad R_6 := \frac{R_5}{(1 - EF)}$$

$$R_3 - \frac{N_1 \cdot N_3}{N_1 + N_2} = 0 \qquad R_4 - \frac{N_3 \cdot (N_1 + N_2)}{N_1} = 0$$

$$R_1 - N_3 \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{-3} = 0 \qquad R_2 - N_3 \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{-2} = 0 \qquad R_3 - N_3 \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{-1} = 0$$

$$R_4 - N_3 \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{1} = 0 \qquad R_5 - N_3 \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{2} = 0 \qquad R_6 - N_3 \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{3} = 0$$

$R_1 = 0.921661$

$R_2 = 1.089765$

$R_3 = 1.288531$

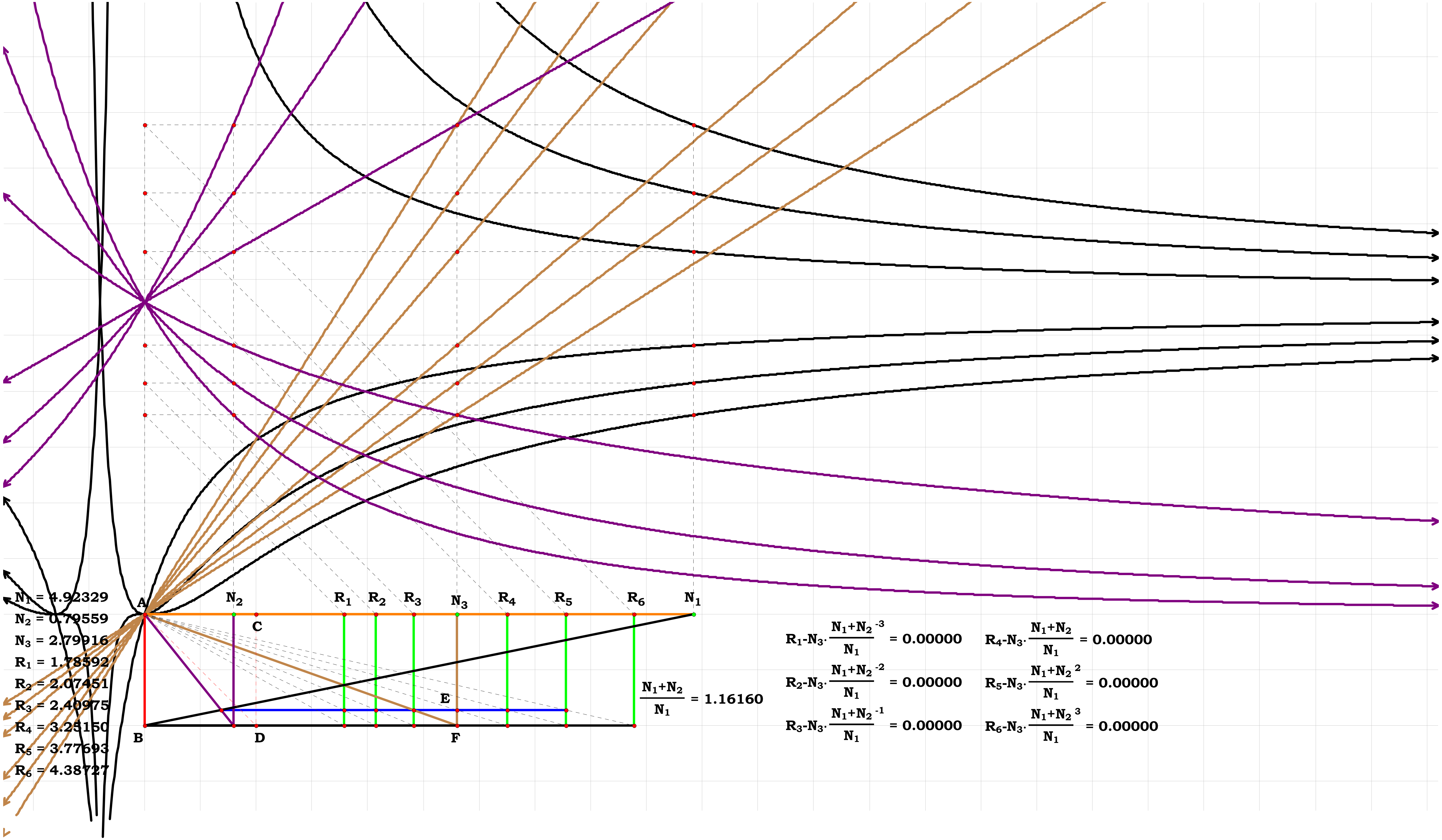
$R_4 = 1.801435$

$R_5 = 2.130004$

$R_6 = 2.518501$

$$R_1 - \frac{{N_1}^3 \cdot N_3}{{N_1}^3 + 3 \cdot {N_1}^2 \cdot N_2 + 3 \cdot N_1 \cdot {N_2}^2 + {N_2}^3} = 0$$

$$R_6 - \frac{N_3 \cdot {N_1}^3 + 3 \cdot N_3 \cdot {N_1}^2 \cdot N_2 + 3 \cdot N_3 \cdot N_1 \cdot {N_2}^2 + N_3 \cdot {N_2}^3}{{N_1}^3} = 0$$


A
B
C
D
E
F
N_2
R_1
R_2
R_3
N_3
R_4
R_5
R_6
N_1
$N_1 = 4.92329$
$N_2 = 0.79559$
$N_3 = 2.79916$
$R_1 = 1.78592$
$R_2 = 2.07451$
$R_3 = 2.40975$
$R_4 = 3.25150$
$R_5 = 3.77693$
$R_6 = 4.38727$
$\frac{N_1+N_2}{N_1} = 1.16160$
$R_1 - N_3 \cdot \frac{N_1+N_2}{N_1}^{-3} = 0.00000$
$R_2 - N_3 \cdot \frac{N_1+N_2}{N_1}^{-2} = 0.00000$
$R_3 - N_3 \cdot \frac{N_1+N_2}{N_1}^{-1} = 0.00000$
$R_4 - N_3 \cdot \frac{N_1+N_2}{N_1} = 0.00000$
$R_5 - N_3 \cdot \frac{N_1+N_2}{N_1}^{2} = 0.00000$
$R_6 - N_3 \cdot \frac{N_1+N_2}{N_1}^{3} = 0.00000$

$AB := 1$

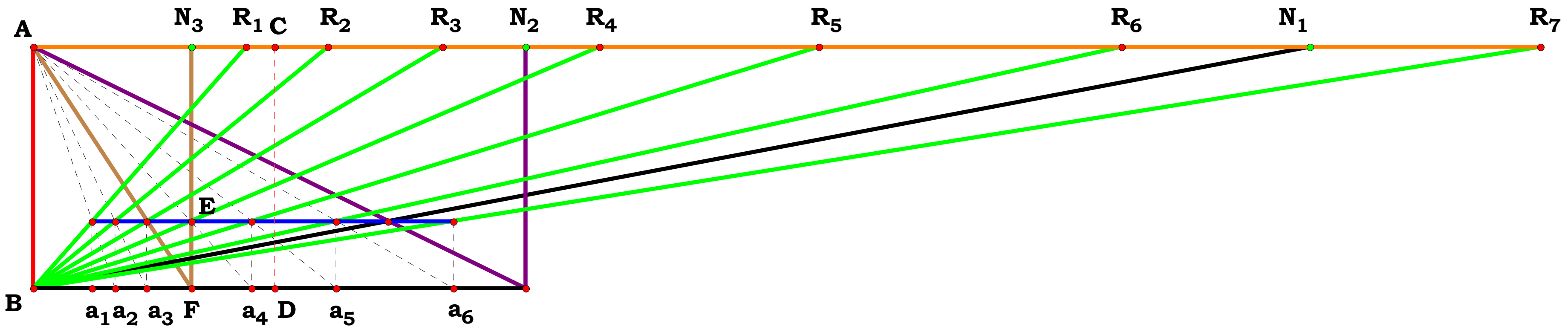
$N_1 := 5.27896$

$N_2 := 2.03640$

$N_3 := .65237$

Exponential Series Notebook 2-1C

$N_1 = 5.27896$
$N_2 = 2.03640$
$N_3 = 0.65237$
$R_1 = 0.88066$
$R_2 = 1.22038$
$R_3 = 1.69115$
$R_4 = 2.34353$
$R_5 = 3.24756$
$R_6 = 4.50033$
$R_7 = 6.23636$



$$EF := \frac{N_2}{N_1 + N_2}$$

$$a_3 := N_3 \cdot (1 - EF) \qquad a_2 := a_3 \cdot (1 - EF) \qquad a_1 := a_2 \cdot (1 - EF)$$

$$a_4 := \frac{N_3}{(1 - EF)} \qquad a_5 := \frac{a_4}{(1 - EF)} \qquad a_6 := \frac{a_5}{(1 - EF)}$$

$$R_1 := \frac{a_1}{EF} \qquad R_2 := \frac{a_2}{EF} \qquad R_3 := \frac{a_3}{EF} \qquad R_4 := \frac{N_3}{EF}$$

$$R_5 := \frac{a_4}{EF} \qquad R_6 := \frac{a_5}{EF} \qquad R_7 := \frac{a_6}{EF}$$

$$R_1 - \frac{N_1 \cdot N_3}{N_2} \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{-2} = 0 \qquad R_2 - \frac{N_1 \cdot N_3}{N_2} \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{-1} = 0 \qquad R_3 - \frac{N_1 \cdot N_3}{N_2} \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{0} = 0 \qquad R_4 - \frac{N_1 \cdot N_3}{N_2} \cdot \frac{(N_1 + N_2)}{N_1} = 0$$

$$R_5 - \frac{N_1 \cdot N_3}{N_2} \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{2} = 0 \qquad R_6 - \frac{N_1 \cdot N_3}{N_2} \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{3} = 0 \qquad R_7 - \frac{N_1 \cdot N_3}{N_2} \cdot \left[\frac{(N_1 + N_2)}{N_1}\right]^{4} = 0$$

$R_1 = 0.880653$

$R_2 = 1.220371$

$R_3 = 1.691139$

$R_4 = 2.343509$

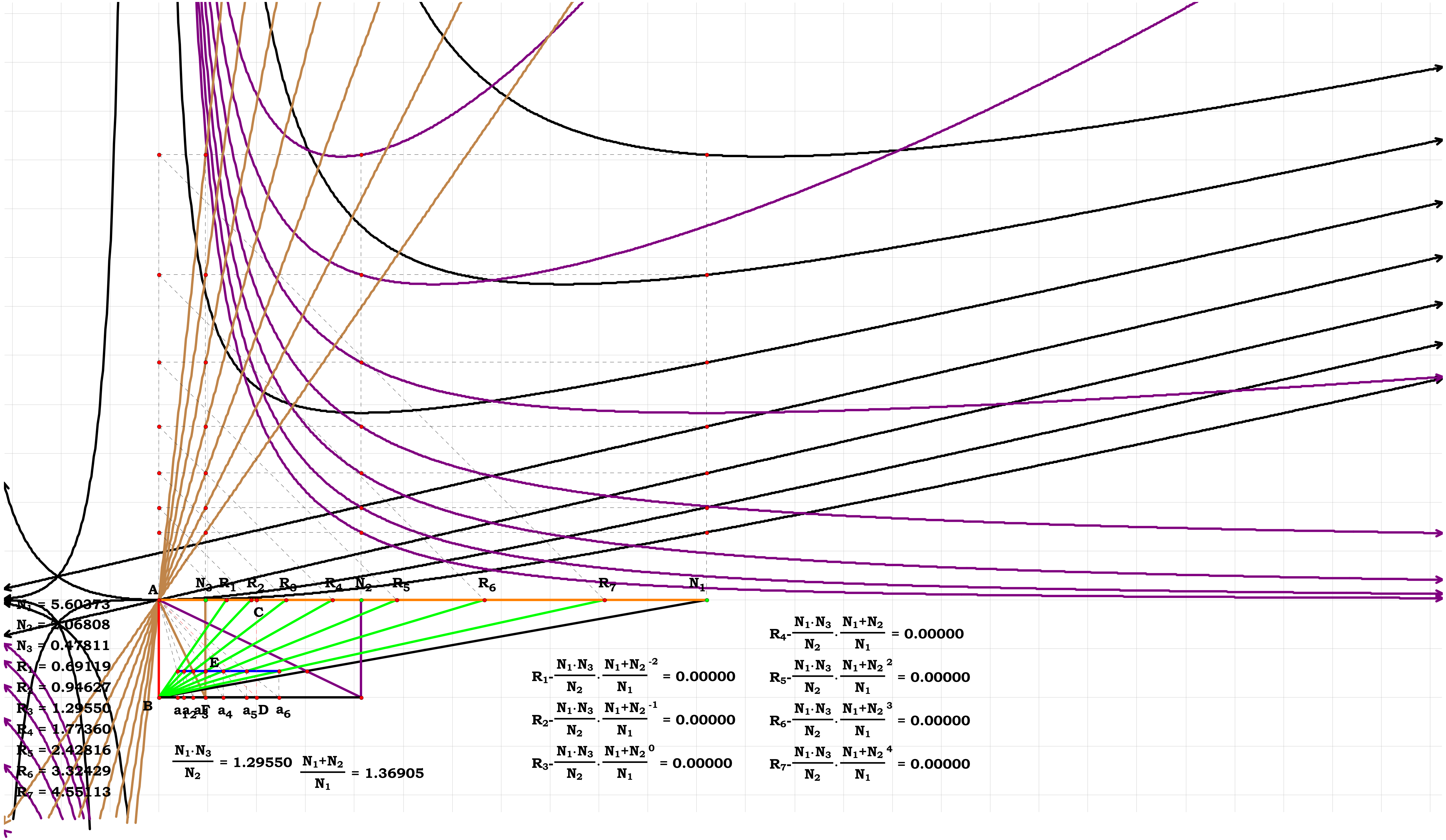
$R_5 = 3.247536$

$R_6 = 4.500298$

$R_7 = 6.236323$

$$R_1 - \frac{{N_1}^3 \cdot N_3}{{N_1}^2 \cdot N_2 + 2 \cdot N_1 \cdot {N_2}^2 + {N_2}^3} = 0$$

$$R_7 - \frac{N_3 \cdot {N_1}^4 + 4 \cdot N_3 \cdot {N_1}^3 \cdot N_2 + 6 \cdot N_3 \cdot {N_1}^2 \cdot {N_2}^2 + 4 \cdot N_3 \cdot N_1 \cdot {N_2}^3 + N_3 \cdot {N_2}^4}{{N_1}^3 \cdot N_2} = 0$$



$N_1 = 5.60373$
$N_2 = 2.06808$
$N_3 = 0.47811$
$R_1 = 0.69119$
$R_2 = 0.94627$
$R_3 = 1.29550$
$R_4 = 1.77360$
$R_5 = 2.42816$
$R_6 = 3.32429$
$R_7 = 4.55113$

$\frac{N_1 \cdot N_3}{N_2} = 1.29550$ $\frac{N_1 + N_2}{N_1} = 1.36905$

$R_1 - \frac{N_1 \cdot N_3}{N_2} \cdot \frac{N_1 + N_2}{N_1}^{-2} = 0.00000$

$R_2 - \frac{N_1 \cdot N_3}{N_2} \cdot \frac{N_1 + N_2}{N_1}^{-1} = 0.00000$

$R_3 - \frac{N_1 \cdot N_3}{N_2} \cdot \frac{N_1 + N_2}{N_1}^{0} = 0.00000$

$R_4 - \frac{N_1 \cdot N_3}{N_2} \cdot \frac{N_1 + N_2}{N_1} = 0.00000$

$R_5 - \frac{N_1 \cdot N_3}{N_2} \cdot \frac{N_1 + N_2}{N_1}^{2} = 0.00000$

$R_6 - \frac{N_1 \cdot N_3}{N_2} \cdot \frac{N_1 + N_2}{N_1}^{3} = 0.00000$

$R_7 - \frac{N_1 \cdot N_3}{N_2} \cdot \frac{N_1 + N_2}{N_1}^{4} = 0.00000$

Exponential Series Notebook 3-02

$AB := 1$

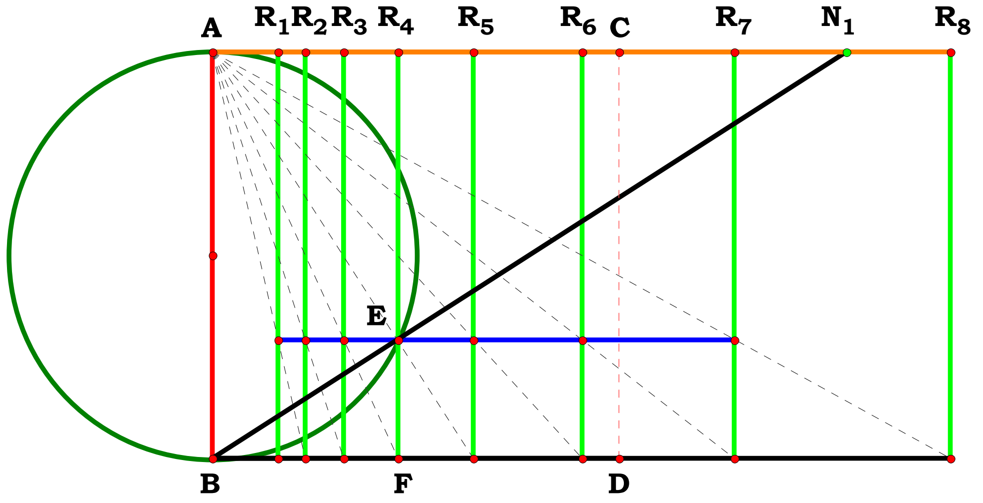
$N_1 := 1.55615$

$$EF := \frac{1}{N_1^{\,2}+1} \qquad R_5 := \frac{1}{N_1}$$

$$R_4 := R_5\cdot(1-EF) \qquad R_3 := R_4\cdot(1-EF) \qquad R_2 := R_3\cdot(1-EF) \qquad R_1 := R_2\cdot(1-EF)$$

$$R_6 := \frac{R_5}{(1-EF)} \qquad R_7 := \frac{R_6}{(1-EF)} \qquad R_8 := \frac{R_7}{(1-EF)}$$

$N_1 = 1.55615$
$R_1 = 0.16123$
$R_2 = 0.22781$
$R_3 = 0.32188$
$R_4 = 0.45480$
$R_5 = 0.64261$
$R_6 = 0.90798$
$R_7 = 1.28293$
$R_8 = 1.81271$



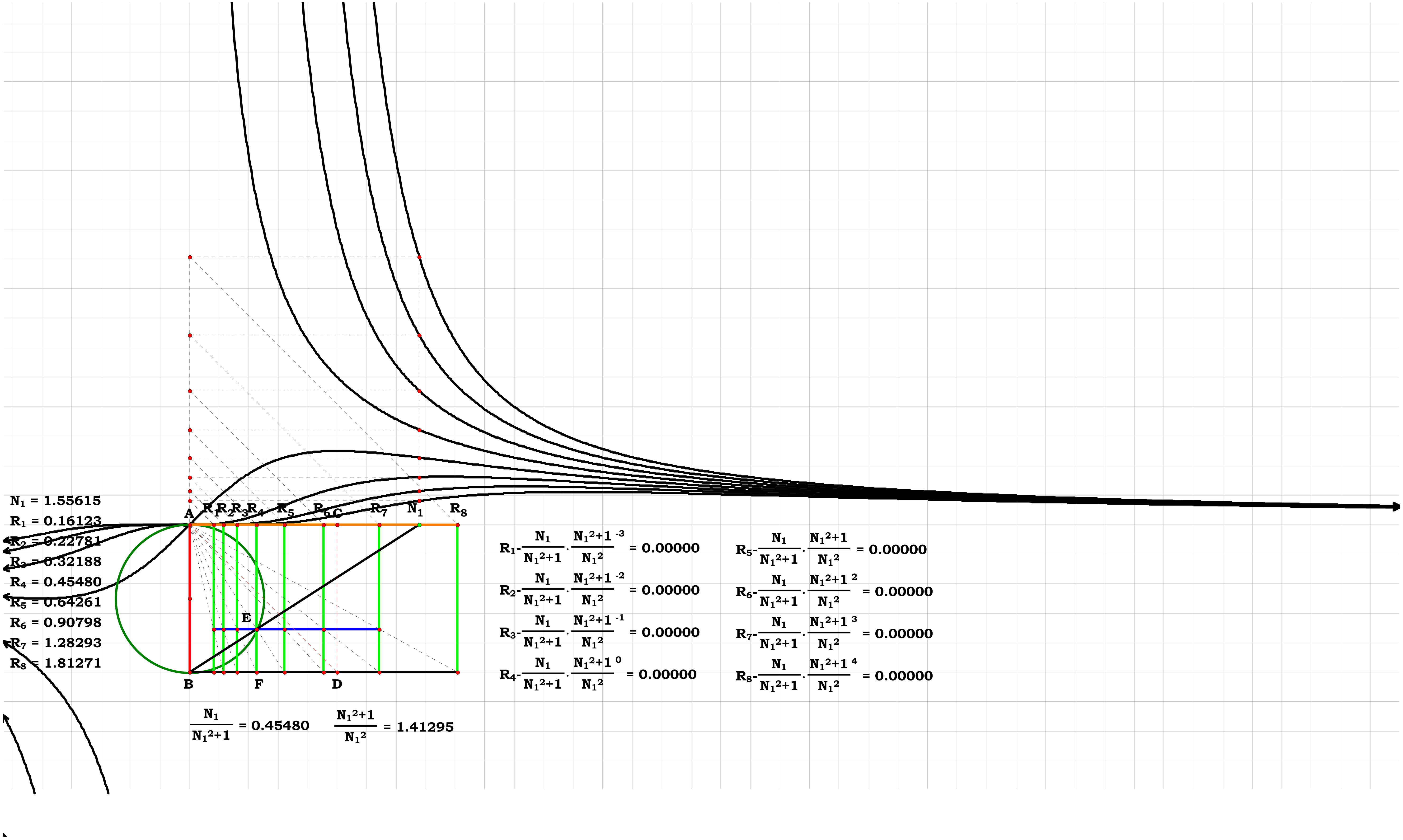
$$R_1 - \frac{N_1}{N_1^{\,2}+1}\cdot\left(\frac{N_1^{\,2}+1}{N_1^{\,2}}\right)^{-3} = 0 \qquad R_2 - \frac{N_1}{N_1^{\,2}+1}\cdot\left(\frac{N_1^{\,2}+1}{N_1^{\,2}}\right)^{-2} = 0 \qquad R_3 - \frac{N_1}{N_1^{\,2}+1}\cdot\left(\frac{N_1^{\,2}+1}{N_1^{\,2}}\right)^{-1} = 0 \qquad R_4 - \frac{N_1}{N_1^{\,2}+1}\cdot\left(\frac{N_1^{\,2}+1}{N_1^{\,2}}\right)^{0} = 0$$

$$R_5 - \frac{N_1}{N_1^{\,2}+1}\cdot\left(\frac{N_1^{\,2}+1}{N_1^{\,2}}\right)^{1} = 0 \qquad R_6 - \frac{N_1}{N_1^{\,2}+1}\cdot\left(\frac{N_1^{\,2}+1}{N_1^{\,2}}\right)^{2} = 0 \qquad R_7 - \frac{N_1}{N_1^{\,2}+1}\cdot\left(\frac{N_1^{\,2}+1}{N_1^{\,2}}\right)^{3} = 0 \qquad R_8 - \frac{N_1}{N_1^{\,2}+1}\cdot\left(\frac{N_1^{\,2}+1}{N_1^{\,2}}\right)^{4} = 0$$

$R_1 = 0.161229$
$R_2 = 0.227808$
$R_3 = 0.321881$
$R_4 = 0.454801$
$R_5 = 0.642612$
$R_6 = 0.907978$
$R_7 = 1.282927$
$R_8 = 1.812711$

$$R_1 - \frac{N_1^{\,7}}{N_1^{\,8}+4\cdot N_1^{\,6}+6\cdot N_1^{\,4}+4\cdot N_1^{\,2}+1} = 0$$

$$R_8 - \frac{N_1^{\,6}+3\cdot N_1^{\,4}+3\cdot N_1^{\,2}+1}{N_1^{\,7}} = 0$$



$N_1 = 1.55615$

$R_1 = 0.16123$

$R_2 = 0.22781$

$R_3 = 0.32188$

$R_4 = 0.45480$

$R_5 = 0.64261$

$R_6 = 0.90798$

$R_7 = 1.28293$

$R_8 = 1.81271$

$R_1 - \frac{N_1}{N_1^2+1} \cdot \frac{N_1^2+1}{N_1^2}^{-3} = 0.00000$

$R_2 - \frac{N_1}{N_1^2+1} \cdot \frac{N_1^2+1}{N_1^2}^{-2} = 0.00000$

$R_3 - \frac{N_1}{N_1^2+1} \cdot \frac{N_1^2+1}{N_1^2}^{-1} = 0.00000$

$R_4 - \frac{N_1}{N_1^2+1} \cdot \frac{N_1^2+1}{N_1^2}^{0} = 0.00000$

$R_5 - \frac{N_1}{N_1^2+1} \cdot \frac{N_1^2+1}{N_1^2} = 0.00000$

$R_6 - \frac{N_1}{N_1^2+1} \cdot \frac{N_1^2+1}{N_1^2}^{2} = 0.00000$

$R_7 - \frac{N_1}{N_1^2+1} \cdot \frac{N_1^2+1}{N_1^2}^{3} = 0.00000$

$R_8 - \frac{N_1}{N_1^2+1} \cdot \frac{N_1^2+1}{N_1^2}^{4} = 0.00000$

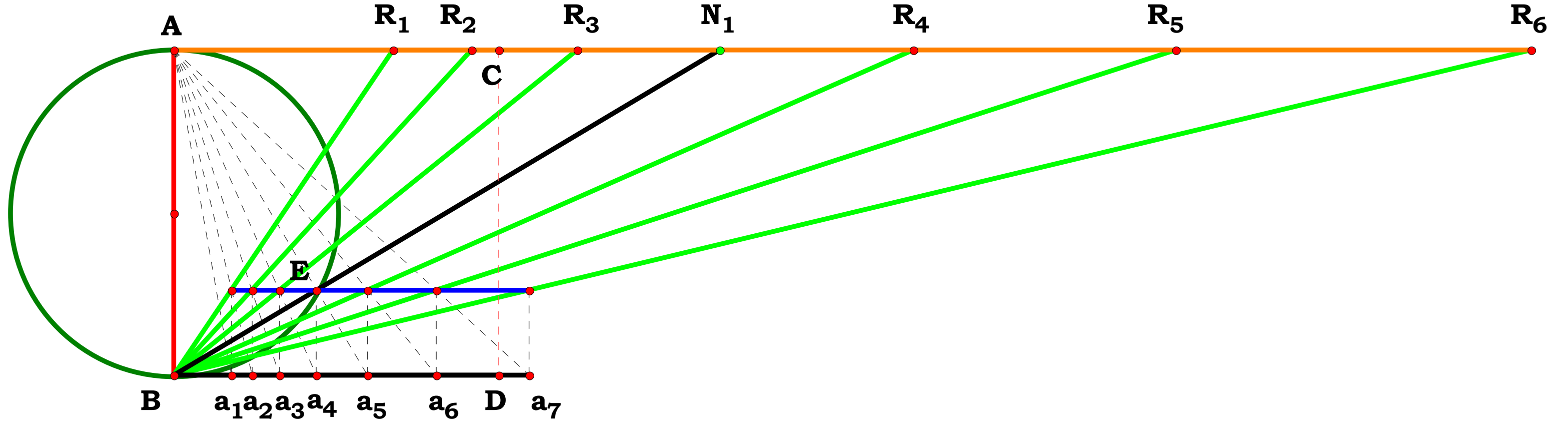
$\frac{N_1}{N_1^2+1} = 0.45480$ $\frac{N_1^2+1}{N_1^2} = 1.41295$

Exponential Series Notebook 3-03

$AB := 1$

$N_1 := 1.67987$

$N_1 = 1.67987$
$R_1 = 0.67619$
$R_2 = 0.91580$
$R_3 = 1.24033$
$R_4 = 2.27515$
$R_5 = 3.08139$
$R_6 = 4.17332$



$$Ea_4 := \frac{1}{{N_1}^2+1} \qquad a_5 := \frac{1}{N_1} \qquad a_4 := a_5 \cdot (1 - Ea_4)$$

$$a_3 := a_4 \cdot (1 - Ea_4) \qquad a_2 := a_3 \cdot (1 - Ea_4) \qquad a_1 := a_2 \cdot (1 - Ea_4)$$

$$a_6 := \frac{a_5}{(1 - Ea_4)} \qquad a_6 := \frac{a_5}{(1 - Ea_4)} \qquad a_7 := \frac{a_6}{(1 - Ea_4)}$$

$$R_1 := \frac{a_1}{Ea_4} \quad R_2 := \frac{a_2}{Ea_4} \quad R_3 := \frac{a_3}{Ea_4} \quad N_1 - \frac{a_4}{Ea_4} = 0$$

$$R_4 := \frac{a_5}{Ea_4} \quad R_5 := \frac{a_6}{Ea_4} \quad R_6 := \frac{a_7}{Ea_4}$$

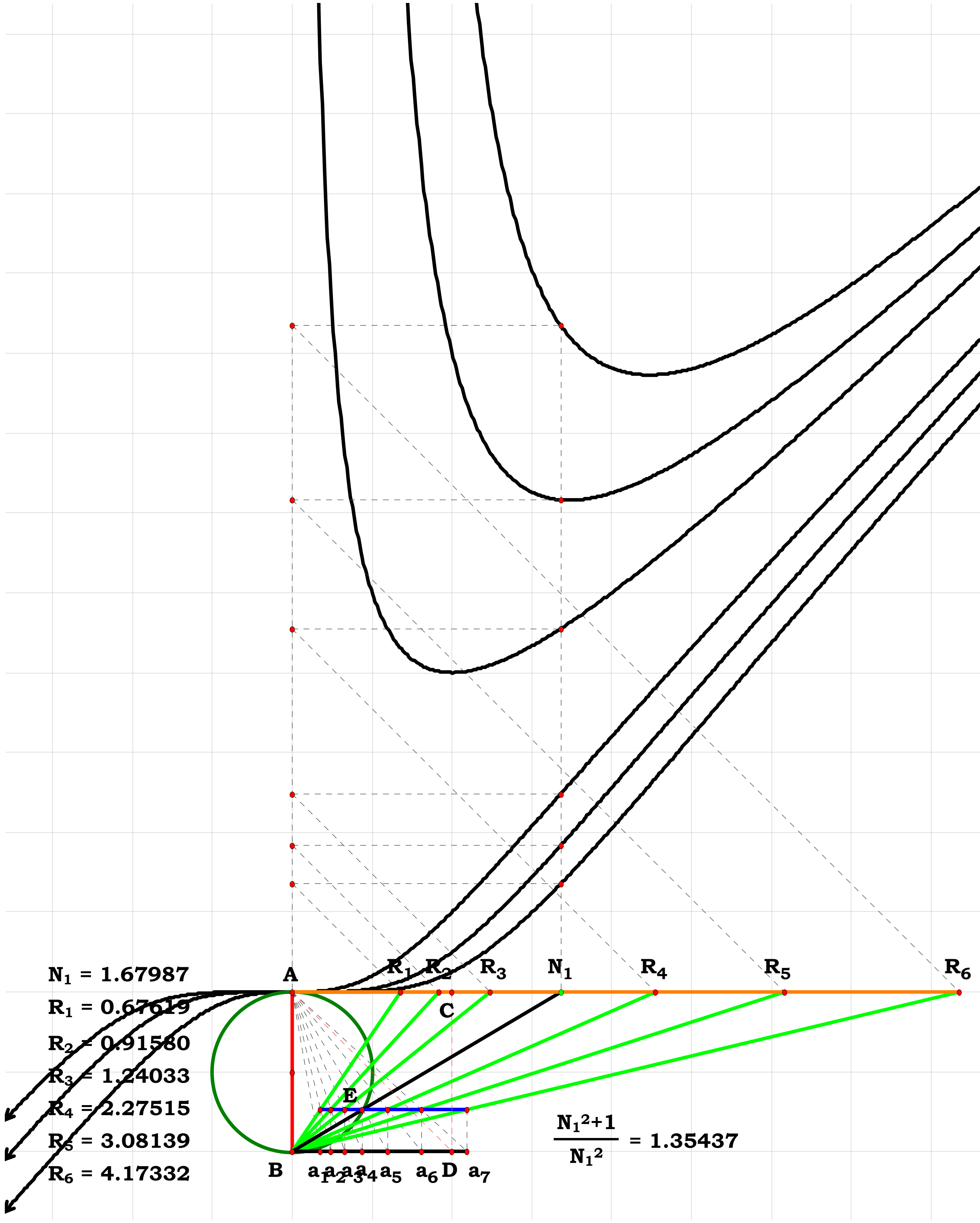
$$R_2 - \frac{{N_1}^5}{\left({N_1}^2+1\right)^2} = 0 \qquad R_3 - \frac{{N_1}^3}{{N_1}^2+1} = 0 \qquad R_4 - \frac{{N_1}^2+1}{N_1} = 0$$

$$R_1 - N_1 \cdot \left(\frac{{N_1}^2+1}{{N_1}^2}\right)^{-3} = 0 \qquad R_2 - N_1 \cdot \left(\frac{{N_1}^2+1}{{N_1}^2}\right)^{-2} = 0 \qquad R_3 - N_1 \cdot \left(\frac{{N_1}^2+1}{{N_1}^2}\right)^{-1} = 0 \qquad N_1 - N_1 \cdot \left(\frac{{N_1}^2+1}{{N_1}^2}\right)^{0} = 0$$

$$R_4 - N_1 \cdot \left(\frac{{N_1}^2+1}{{N_1}^2}\right)^{1} = 0 \qquad R_5 - N_1 \cdot \left(\frac{{N_1}^2+1}{{N_1}^2}\right)^{2} = 0 \qquad R_6 - N_1 \cdot \left(\frac{{N_1}^2+1}{{N_1}^2}\right)^{3} = 0$$

$R_1 = 0.676192$ $\quad R_4 = 2.275154$
$R_2 = 0.91581$ $\quad R_5 = 3.081385$
$R_3 = 1.240339$ $\quad R_6 = 4.173315$

$$R_1 - \frac{{N_1}^7}{{N_1}^6 + 3 \cdot {N_1}^4 + 3 \cdot {N_1}^2 + 1} = 0 \qquad R_6 - \frac{{N_1}^6 + 3 \cdot {N_1}^4 + 3 \cdot {N_1}^2 + 1}{{N_1}^5} = 0$$



$N_1 = 1.67987$

$R_1 = 0.67619$

$R_2 = 0.91580$

$R_3 = 1.24033$

$R_4 = 2.27515$

$R_5 = 3.08139$

$R_6 = 4.17332$

$$\frac{N_1{}^2+1}{N_1{}^2} = 1.35437$$

$$R_1 - N_1 \cdot \frac{N_1{}^2+1^{\ -3}}{N_1{}^2} = 0.00000 \qquad R_4 - N_1 \cdot \frac{N_1{}^2+1}{N_1{}^2} = 0.00000$$

$$R_2 - N_1 \cdot \frac{N_1{}^2+1^{\ -2}}{N_1{}^2} = 0.00000 \qquad R_5 - N_1 \cdot \frac{N_1{}^2+1^{\ 2}}{N_1{}^2} = 0.00000$$

$$R_3 - N_1 \cdot \frac{N_1{}^2+1^{\ -1}}{N_1{}^2} = 0.00000 \qquad R_6 - N_1 \cdot \frac{N_1{}^2+1^{\ 3}}{N_1{}^2} = 0.00000$$

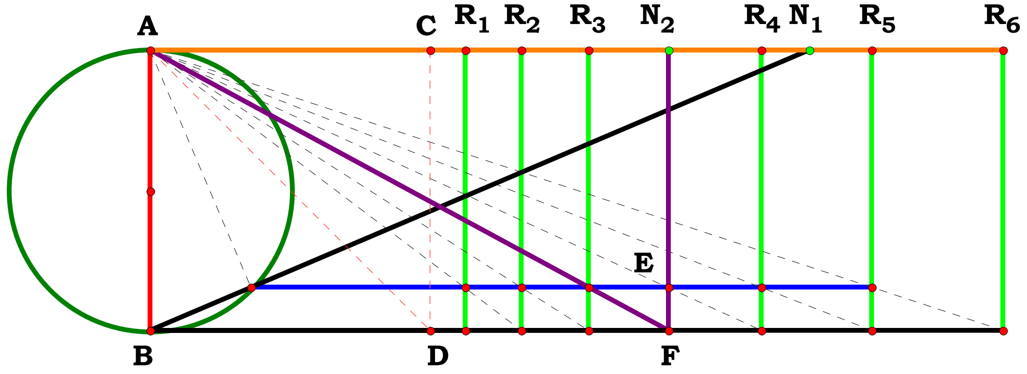
Exponential Series Notebook 3-04

$AB := 1$

$N_1 := 2.35356$

$N_2 := 1.84796$

$N_1 = 2.35356$
$N_2 = 1.84796$
$R_1 = 1.12321$
$R_2 = 1.32598$
$R_3 = 1.56536$
$R_4 = 2.18157$
$R_5 = 2.57541$
$R_6 = 3.04035$



$$EF := \frac{1}{N_1^2 + 1}$$

$R_3 := N_2 \cdot (1 - EF) \qquad R_2 := R_3 \cdot (1 - EF) \qquad R_1 := R_2 \cdot (1 - EF)$

$$R_4 := \frac{N_2}{1 - EF} \qquad R_5 := \frac{R_4}{(1 - EF)} \qquad R_6 := \frac{R_5}{(1 - EF)}$$

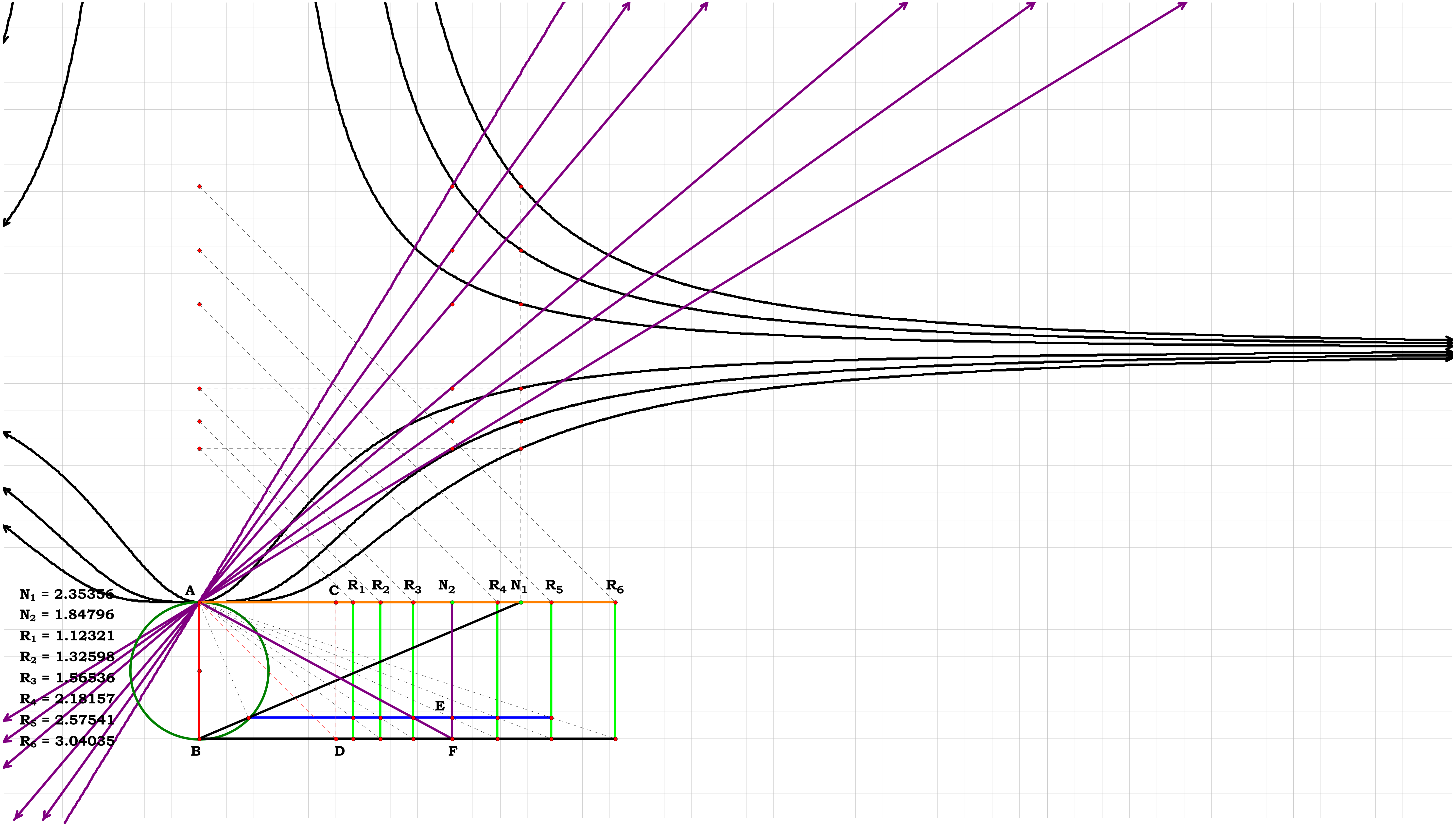
$$R_1 - N_2 \cdot \left[\frac{\left(N_1^2 + 1\right)}{N_1^2}\right]^{-3} = 0 \qquad R_2 - N_2 \cdot \left[\frac{\left(N_1^2 + 1\right)}{N_1^2}\right]^{-2} = 0 \qquad R_3 - N_2 \cdot \left[\frac{\left(N_1^2 + 1\right)}{N_1^2}\right]^{-1} = 0$$

$$R_4 - N_2 \cdot \left[\frac{\left(N_1^2 + 1\right)}{N_1^2}\right]^{1} = 0 \qquad R_5 - N_2 \cdot \left[\frac{\left(N_1^2 + 1\right)}{N_1^2}\right]^{2} = 0 \qquad R_6 - N_2 \cdot \left[\frac{\left(N_1^2 + 1\right)}{N_1^2}\right]^{3} = 0$$

$R_1 = 1.123211$
$R_2 = 1.325985$
$R_3 = 1.565365$
$R_4 = 2.181572$
$R_5 = 2.575412$
$R_6 = 3.040351$

$$R_1 - \frac{N_1^6 \cdot N_2}{N_1^6 + 3 \cdot N_1^4 + 3 \cdot N_1^2 + 1} = 0$$

$$R_6 - \frac{N_2 \cdot N_1^6 + 3 \cdot N_2 \cdot N_1^4 + 3 \cdot N_2 \cdot N_1^2 + N_2}{N_1^6} = 0$$


N$_1$ = 2.35356
N$_2$ = 1.84796
R$_1$ = 1.12321
R$_2$ = 1.32598
R$_3$ = 1.56536
R$_4$ = 2.18157
R$_5$ = 2.57541
R$_6$ = 3.04035
A
C
R$_1$
R$_2$
R$_3$
N$_2$
R$_4$
N$_1$
R$_5$
R$_6$
E
B
D
F

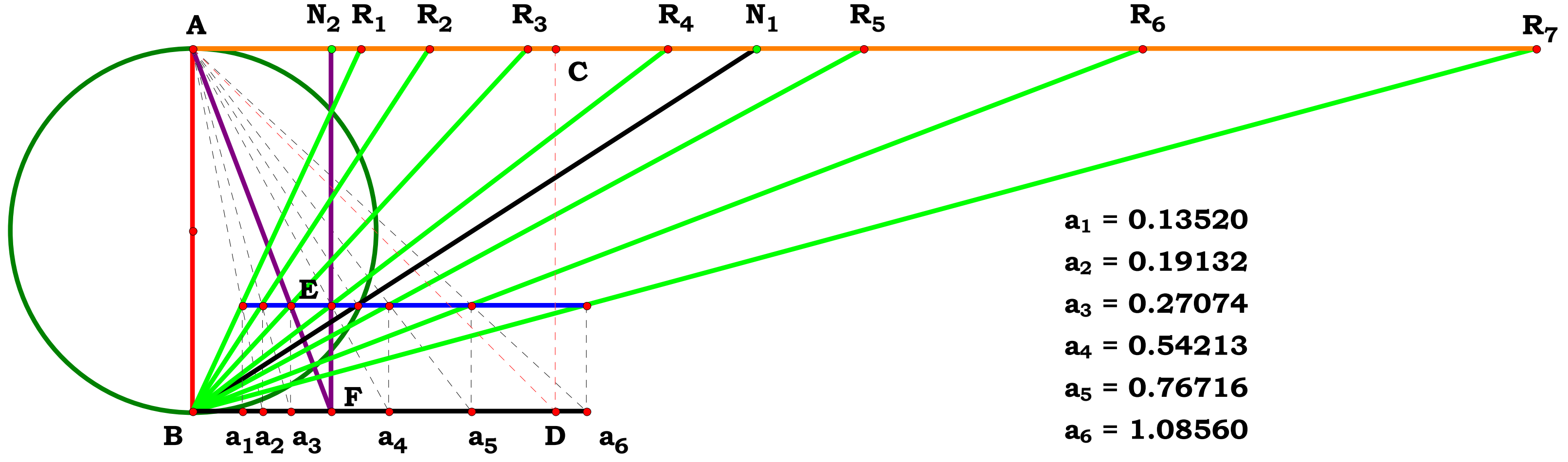
$AB := 1$

$N_1 := 1.55215$

$N_2 := .38311$

Exponential Series Notebook 3-05

N₁ = 1.55215
N₂ = 0.38311
R₁ = 0.46093
R₂ = 0.65225
R₃ = 0.92299
R₄ = 1.30610
R₅ = 1.84824
R₆ = 2.61540
R₇ = 3.70100



a₁ = 0.13520
a₂ = 0.19132
a₃ = 0.27074
a₄ = 0.54213
a₅ = 0.76716
a₆ = 1.08560

$$EF := \frac{1}{N_1^{\,2}+1} \qquad a_3 := N_2\cdot(1-EF)$$

$$a_2 := a_3\cdot(1-EF) \qquad a_1 := a_2\cdot(1-EF)$$

$$a_4 := \frac{N_2}{(1-EF)} \qquad a_5 := \frac{a_4}{(1-EF)} \qquad a_6 := \frac{a_5}{(1-EF)}$$

$$R_1 := \frac{a_1}{EF} \qquad R_2 := \frac{a_2}{EF} \qquad R_3 := \frac{a_3}{EF} \qquad R_4 := \frac{N_2}{EF} \qquad R_5 := \frac{a_4}{EF} \qquad R_6 := \frac{a_5}{EF} \qquad R_7 := \frac{a_6}{EF}$$

$$R_1 - N_1^{\,2}\cdot N_2\cdot\left(\frac{N_1^{\,2}+1}{N_1^{\,2}}\right)^{-2} = 0 \qquad R_2 - N_1^{\,2}\cdot N_2\cdot\left(\frac{N_1^{\,2}+1}{N_1^{\,2}}\right)^{-1} = 0 \qquad R_3 - N_1^{\,2}\cdot N_2\cdot\left(\frac{N_1^{\,2}+1}{N_1^{\,2}}\right)^{0} = 0$$

$$R_4 - N_1^{\,2}\cdot N_2\cdot\left(\frac{N_1^{\,2}+1}{N_1^{\,2}}\right)^{1} = 0 \qquad R_5 - N_1^{\,2}\cdot N_2\cdot\left(\frac{N_1^{\,2}+1}{N_1^{\,2}}\right)^{2} = 0 \qquad R_6 - N_1^{\,2}\cdot N_2\cdot\left(\frac{N_1^{\,2}+1}{N_1^{\,2}}\right)^{3} = 0 \qquad R_7 - N_1^{\,2}\cdot N_2\cdot\left(\frac{N_1^{\,2}+1}{N_1^{\,2}}\right)^{4} = 0$$

$R_1 = 0.460923$

$R_2 = 0.652243$

$R_3 = 0.922977$

$R_4 = 1.306087$

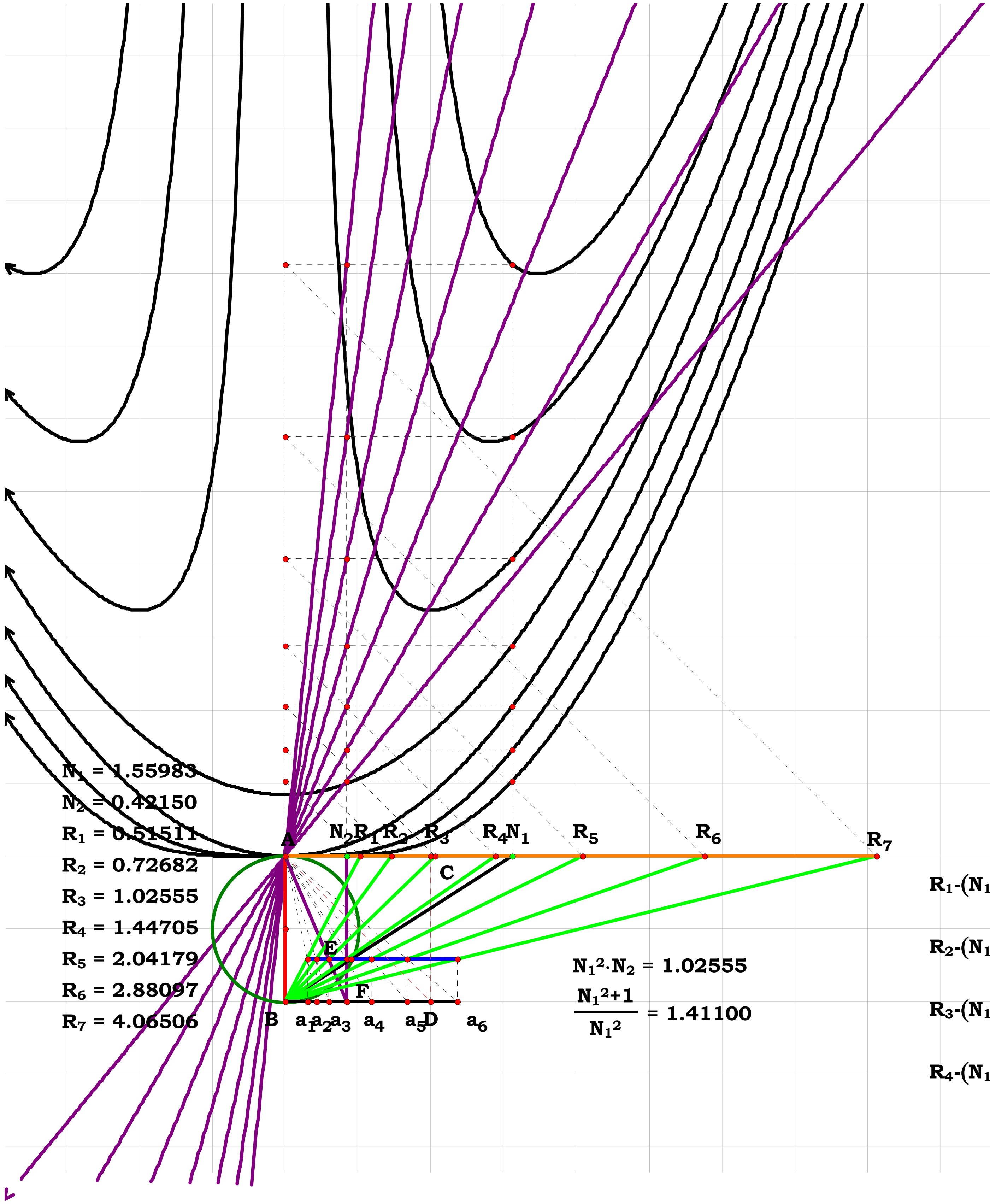
$R_5 = 1.848219$

$R_6 = 2.615379$

$R_7 = 3.700972$

$$R_1 - \frac{N_1^{\,6}\cdot N_2}{N_1^{\,4}+2\cdot N_1^{\,2}+1} = 0$$

$$R_7 - \frac{N_2\cdot N_1^{\,8}+4\cdot N_2\cdot N_1^{\,6}+6\cdot N_2\cdot N_1^{\,4}+4\cdot N_2\cdot N_1^{\,2}+N_2}{N_1^{\,6}} = 0$$



$N_1 = 1.55983$

$N_2 = 0.42150$

$R_1 = 0.51511$

$R_2 = 0.72682$

$R_3 = 1.02555$

$R_4 = 1.44705$

$R_5 = 2.04179$

$R_6 = 2.88097$

$R_7 = 4.06506$

$N_1^2 \cdot N_2 = 1.02555$

$\frac{N_1^2+1}{N_1^2} = 1.41100$

$R_1 - (N_1^2 \cdot N_2) \cdot \frac{N_1^2+1}{N_1^2}^{-2} = 0.00000$

$R_2 - (N_1^2 \cdot N_2) \cdot \frac{N_1^2+1}{N_1^2}^{-1} = 0.00000$

$R_3 - (N_1^2 \cdot N_2) \cdot \frac{N_1^2+1}{N_1^2}^{0} = 0.00000$

$R_4 - (N_1^2 \cdot N_2) \cdot \frac{N_1^2+1}{N_1^2} = 0.00000$

$R_5 - (N_1^2 \cdot N_2) \cdot \frac{N_1^2+1}{N_1^2}^{2} = 0.00000$

$R_6 - (N_1^2 \cdot N_2) \cdot \frac{N_1^2+1}{N_1^2}^{3} = 0.00000$

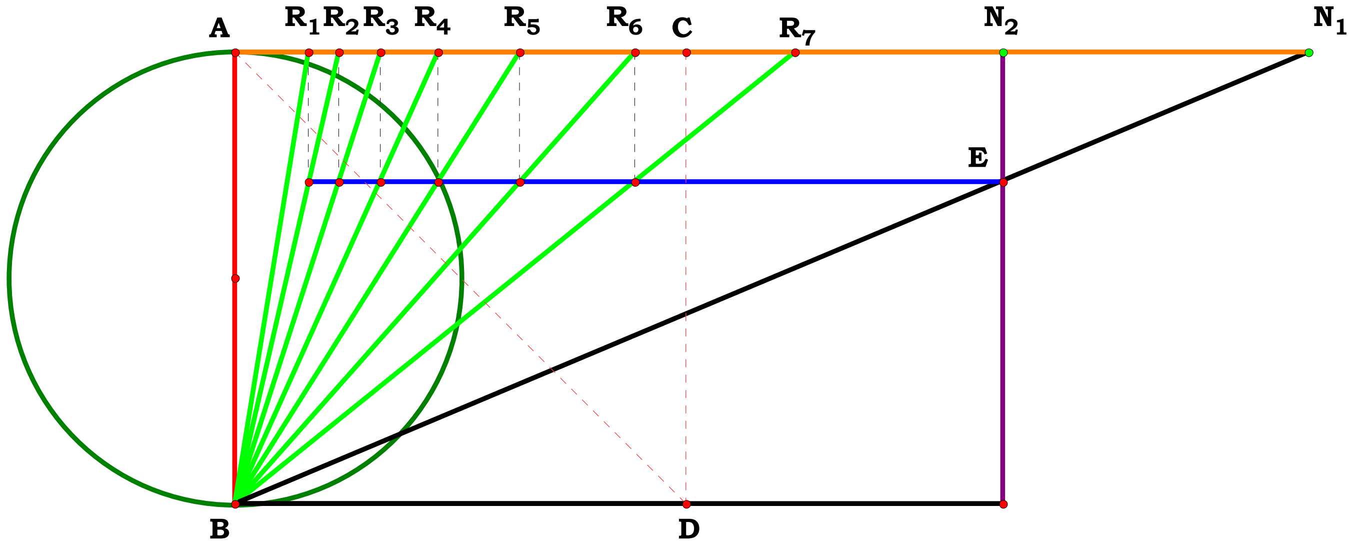
$R_7 - (N_1^2 \cdot N_2) \cdot \frac{N_1^2+1}{N_1^2}^{4} = 0.00000$

$AB := 1$

$N_1 := 2.37839$

$N_2 := 1.69911$

$N_1 = 2.37839$
$N_2 = 1.69911$
$R_1 = 0.16469$
$R_2 = 0.23053$
$R_3 = 0.32269$
$R_4 = 0.45170$
$R_5 = 0.63229$
$R_6 = 0.88507$
$R_7 = 1.23891$



Exponential Series Notebook 3-07

$$EN_2 := 1 - \frac{N_2}{N_1} \qquad R_4 := \sqrt{EN_2 \cdot (1 - EN_2)}$$

$$R_3 := R_4 \cdot (1 - EN_2) \qquad R_2 := R_3 \cdot (1 - EN_2) \qquad R_1 := R_2 \cdot (1 - EN_2)$$

$$R_5 := \frac{R_4}{(1 - EN_2)} \qquad R_6 := \frac{R_5}{(1 - EN_2)} \qquad R_7 := \frac{R_6}{(1 - EN_2)}$$

$$R_1 - \left(\frac{N_1}{N_2}\right)^{-4} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^{\,2}}{N_2^{\,2}}} = 0 \qquad R_2 - \left(\frac{N_1}{N_2}\right)^{-3} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^{\,2}}{N_2^{\,2}}} = 0 \qquad R_3 - \left(\frac{N_1}{N_2}\right)^{-2} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^{\,2}}{N_2^{\,2}}} = 0 \qquad R_4 - \left(\frac{N_1}{N_2}\right)^{-1} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^{\,2}}{N_2^{\,2}}} = 0$$

$$R_5 - \left(\frac{N_1}{N_2}\right)^{0} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^{\,2}}{N_2^{\,2}}} = 0 \qquad R_6 - \left(\frac{N_1}{N_2}\right)^{1} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^{\,2}}{N_2^{\,2}}} = 0 \qquad R_7 - \left(\frac{N_1}{N_2}\right)^{2} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^{\,2}}{N_2^{\,2}}} = 0$$

$R_1 = 0.16469$

$R_2 = 0.230531$

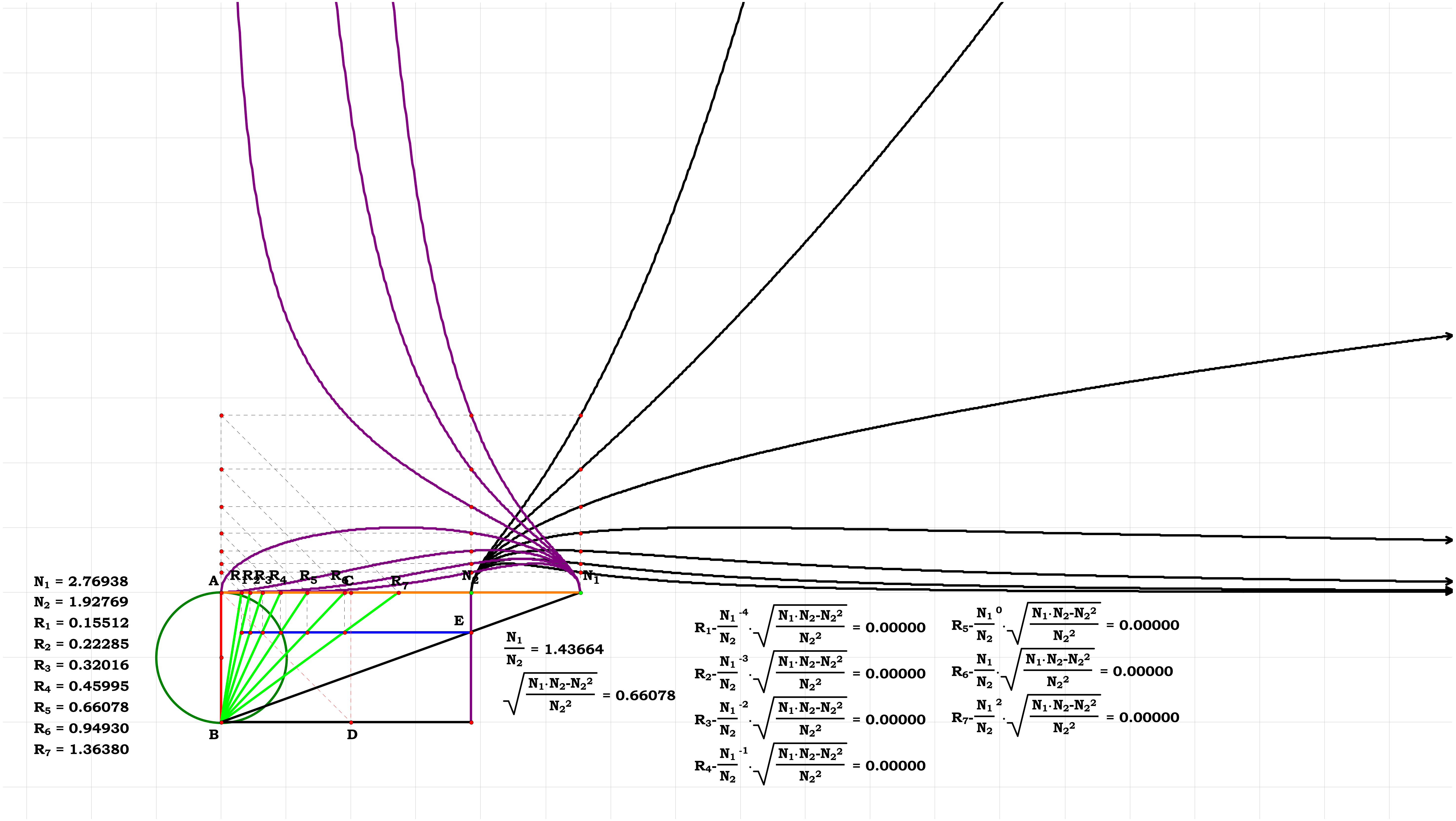
$R_3 = 0.322694$

$R_4 = 0.451702$

$R_5 = 0.632286$

$R_6 = 0.885065$

$R_7 = 1.238902$



$N_1 = 2.76938$

$N_2 = 1.92769$

$R_1 = 0.15512$

$R_2 = 0.22285$

$R_3 = 0.32016$

$R_4 = 0.45995$

$R_5 = 0.66078$

$R_6 = 0.94930$

$R_7 = 1.36380$

$$\frac{N_1}{N_2} = 1.43664$$

$$\sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_2^2}} = 0.66078$$

$$R_1 - \frac{N_1}{N_2}^{-4} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_2^2}} = 0.00000$$

$$R_2 - \frac{N_1}{N_2}^{-3} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_2^2}} = 0.00000$$

$$R_3 - \frac{N_1}{N_2}^{-2} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_2^2}} = 0.00000$$

$$R_4 - \frac{N_1}{N_2}^{-1} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_2^2}} = 0.00000$$

$$R_5 - \frac{N_1}{N_2}^{0} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_2^2}} = 0.00000$$

$$R_6 - \frac{N_1}{N_2} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_2^2}} = 0.00000$$

$$R_7 - \frac{N_1}{N_2}^{2} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_2^2}} = 0.00000$$

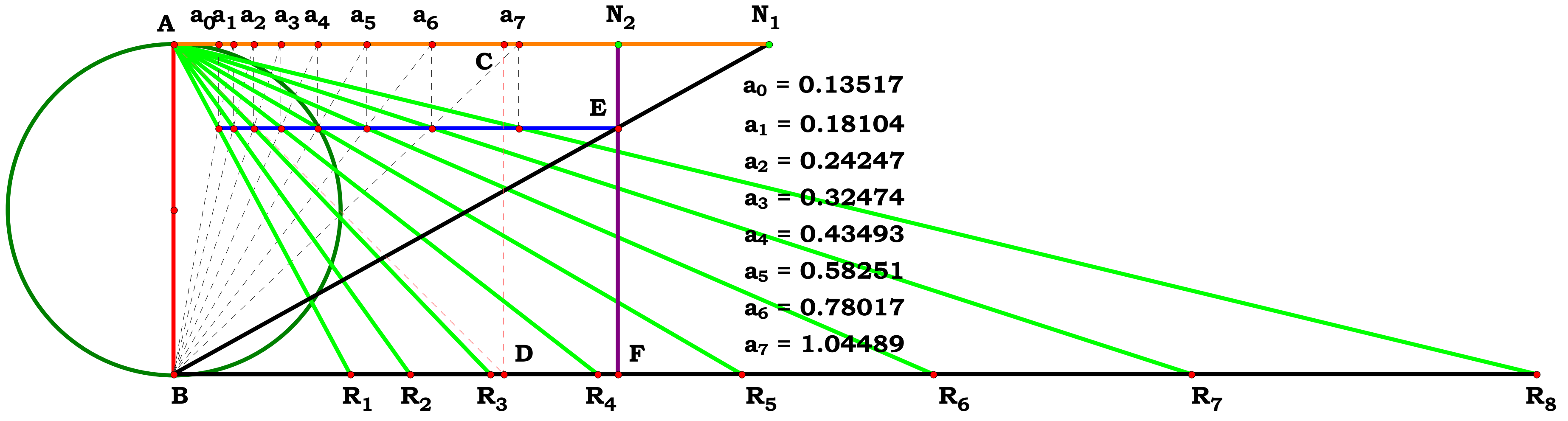
$AB := 1$

$N_1 := 1.80156$

$N_2 := 1.34513$

Exponential Series Notebook 3-08

$N_1 = 1.80156$
$N_2 = 1.34513$
$R_1 = 0.53353$
$R_2 = 0.71457$
$R_3 = 0.95704$
$R_4 = 1.28178$
$R_5 = 1.71671$
$R_6 = 2.29922$
$R_7 = 3.07938$
$R_8 = 4.12428$



$a_0 = 0.13517$
$a_1 = 0.18104$
$a_2 = 0.24247$
$a_3 = 0.32474$
$a_4 = 0.43493$
$a_5 = 0.58251$
$a_6 = 0.78017$
$a_7 = 1.04489$

$EF := \frac{N_2}{N_1} \quad a_4 := \sqrt{EF \cdot (1 - EF)}$

$a_3 := a_4 \cdot EF \quad a_2 := a_3 \cdot EF \quad a_1 := a_2 \cdot EF$

$a_0 := a_1 \cdot EF \quad a_5 := a_4 \cdot EF^{-1} \quad a_6 := a_5 \cdot EF^{-1} \quad a_7 := a_6 \cdot EF^{-1}$

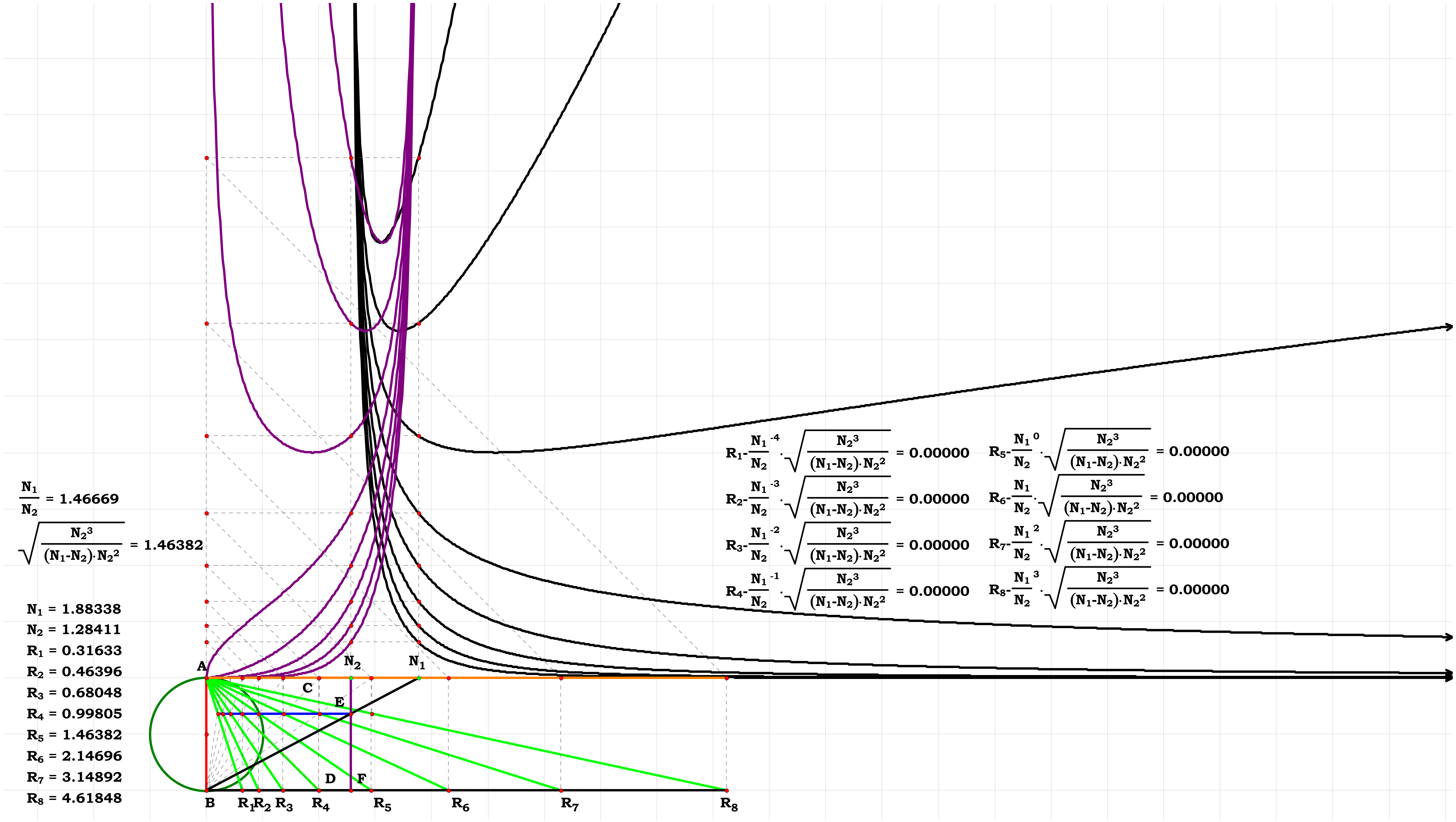
$R_1 := \frac{a_0}{1 - EF} \quad R_2 := \frac{a_1}{1 - EF} \quad R_3 := \frac{a_2}{1 - EF} \quad R_4 := \frac{a_3}{1 - EF}$

$R_5 := \frac{a_4}{1 - EF} \quad R_6 := \frac{a_5}{1 - EF} \quad R_7 := \frac{a_6}{1 - EF} \quad R_8 := \frac{a_7}{1 - EF}$

$R_1 - \left(\frac{N_1}{N_2}\right)^{-3} \cdot \sqrt{\frac{N_2^{\,3}}{(N_1 - N_2) \cdot N_1^{\,2}}} = 0 \quad R_2 - \left(\frac{N_1}{N_2}\right)^{-2} \cdot \sqrt{\frac{N_2^{\,3}}{(N_1 - N_2) \cdot N_1^{\,2}}} = 0 \quad R_3 - \left(\frac{N_1}{N_2}\right)^{-1} \cdot \sqrt{\frac{N_2^{\,3}}{(N_1 - N_2) \cdot N_1^{\,2}}} = 0 \quad R_4 - \left(\frac{N_1}{N_2}\right)^{0} \cdot \sqrt{\frac{N_2^{\,3}}{(N_1 - N_2) \cdot N_1^{\,2}}} = 0$

$R_5 - \left(\frac{N_1}{N_2}\right) \cdot \sqrt{\frac{N_2^{\,3}}{(N_1 - N_2) \cdot N_1^{\,2}}} = 0 \quad R_6 - \left(\frac{N_1}{N_2}\right)^{2} \cdot \sqrt{\frac{N_2^{\,3}}{(N_1 - N_2) \cdot N_1^{\,2}}} = 0 \quad R_7 - \left(\frac{N_1}{N_2}\right)^{3} \cdot \sqrt{\frac{N_2^{\,3}}{(N_1 - N_2) \cdot N_1^{\,2}}} = 0 \quad R_8 - \left(\frac{N_1}{N_2}\right)^{4} \cdot \sqrt{\frac{N_2^{\,3}}{(N_1 - N_2) \cdot N_1^{\,2}}} = 0$

$R_1 = 0.533528$
$R_2 = 0.714565$
$R_3 = 0.957031$
$R_4 = 1.281771$
$R_5 = 1.716702$
$R_6 = 2.299215$
$R_7 = 3.079385$
$R_8 = 4.124283$


$\frac{N_1}{N_2} = 1.46669$
$\sqrt{\frac{N_2^3}{(N_1-N_2)\cdot N_2^2}} = 1.46382$
$N_1 = 1.88338$
$N_2 = 1.28411$
$R_1 = 0.31633$
$R_2 = 0.46396$
$R_3 = 0.68048$
$R_4 = 0.99805$
$R_5 = 1.46382$
$R_6 = 2.14696$
$R_7 = 3.14892$
$R_8 = 4.61848$
$R_1 - \left(\frac{N_1}{N_2}\right)^{-4} \cdot \sqrt{\frac{N_2^3}{(N_1-N_2)\cdot N_2^2}} = 0.00000$
$R_2 - \left(\frac{N_1}{N_2}\right)^{-3} \cdot \sqrt{\frac{N_2^3}{(N_1-N_2)\cdot N_2^2}} = 0.00000$
$R_3 - \left(\frac{N_1}{N_2}\right)^{-2} \cdot \sqrt{\frac{N_2^3}{(N_1-N_2)\cdot N_2^2}} = 0.00000$
$R_4 - \left(\frac{N_1}{N_2}\right)^{-1} \cdot \sqrt{\frac{N_2^3}{(N_1-N_2)\cdot N_2^2}} = 0.00000$
$R_5 - \left(\frac{N_1}{N_2}\right)^{0} \cdot \sqrt{\frac{N_2^3}{(N_1-N_2)\cdot N_2^2}} = 0.00000$
$R_6 - \frac{N_1}{N_2} \cdot \sqrt{\frac{N_2^3}{(N_1-N_2)\cdot N_2^2}} = 0.00000$
$R_7 - \left(\frac{N_1}{N_2}\right)^{2} \cdot \sqrt{\frac{N_2^3}{(N_1-N_2)\cdot N_2^2}} = 0.00000$
$R_8 - \left(\frac{N_1}{N_2}\right)^{3} \cdot \sqrt{\frac{N_2^3}{(N_1-N_2)\cdot N_2^2}} = 0.00000$
A
N_2
N_1
C
E
D
F
B
R_1
R_2
R_3
R_4
R_5
R_6
R_7
R_8

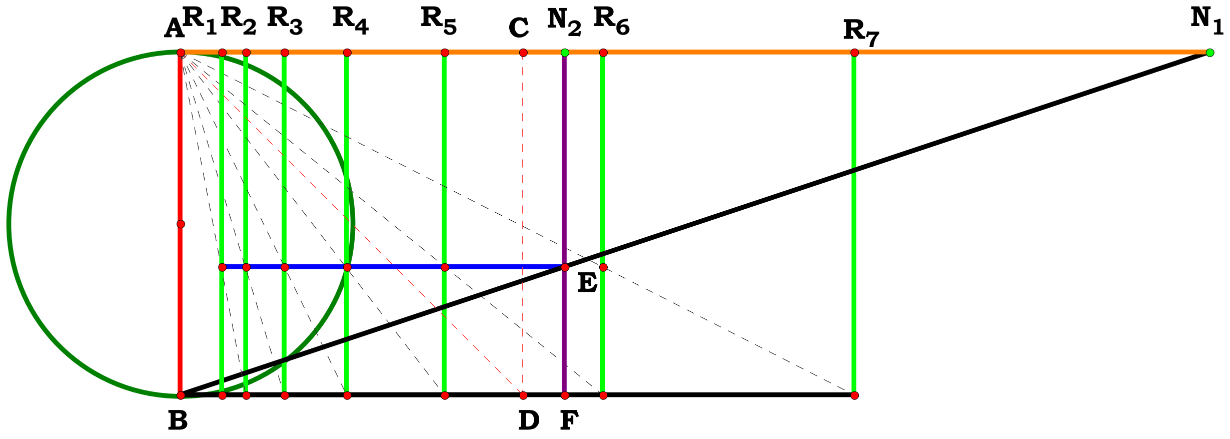
$AB := 1$

$N_1 := 3.00270$

$N_2 := 1.12066$

Exponential Series Notebook 3-09

$N_1 = 3.00270$
$N_2 = 1.12066$
$R_1 = 0.11909$
$R_2 = 0.19001$
$R_3 = 0.30315$
$R_4 = 0.48366$
$R_5 = 0.77165$
$R_6 = 1.23113$
$R_7 = 1.96421$



$$EF := \frac{N_2}{N_1} \qquad R_4 := \sqrt{EF \cdot (1 - EF)}$$

$$R_3 := R_4 \cdot (1 - EF) \qquad R_2 := R_3 \cdot (1 - EF) \qquad R_1 := R_2 \cdot (1 - EF)$$

$$R_5 := \frac{R_4}{(1 - EF)} \qquad R_6 := \frac{R_5}{(1 - EF)} \qquad R_7 := \frac{R_6}{(1 - EF)}$$

$$R_1 - \left(\frac{N_1}{N_1 - N_2}\right)^{-3} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2{}^2}{N_1{}^2}} = 0 \qquad R_2 - \left(\frac{N_1}{N_1 - N_2}\right)^{-2} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2{}^2}{N_1{}^2}} = 0 \qquad R_3 - \left(\frac{N_1}{N_1 - N_2}\right)^{-1} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2{}^2}{N_1{}^2}} = 0 \qquad R_4 - \left(\frac{N_1}{N_1 - N_2}\right)^{0} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2{}^2}{N_1{}^2}} = 0$$

$$R_5 - \left(\frac{N_1}{N_1 - N_2}\right) \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2{}^2}{N_1{}^2}} = 0 \qquad R_6 - \left(\frac{N_1}{N_1 - N_2}\right)^{2} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2{}^2}{N_1{}^2}} = 0 \qquad R_7 - \left(\frac{N_1}{N_1 - N_2}\right)^{3} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2{}^2}{N_1{}^2}} = 0$$

$R_1 = 0.119094$

$R_2 = 0.190009$

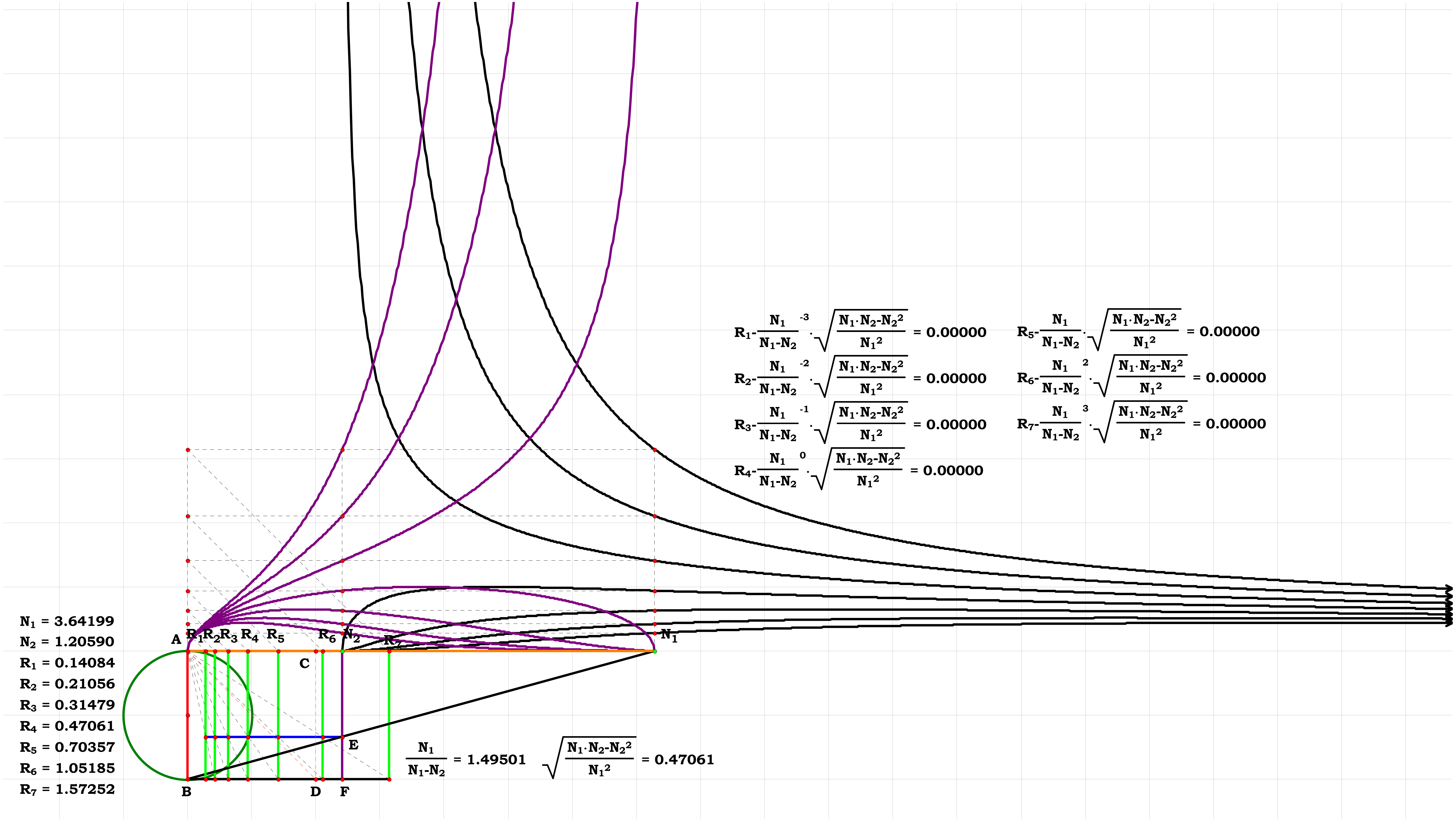
$R_3 = 0.303149$

$R_4 = 0.483659$

$R_5 = 0.771654$

$R_6 = 1.231135$

$R_7 = 1.964214$



$N_1 = 3.64199$
$N_2 = 1.20590$
$R_1 = 0.14084$
$R_2 = 0.21056$
$R_3 = 0.31479$
$R_4 = 0.47061$
$R_5 = 0.70357$
$R_6 = 1.05185$
$R_7 = 1.57252$

$$R_1 - \frac{N_1}{N_1 - N_2}^{-3} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_1^2}} = 0.00000$$

$$R_2 - \frac{N_1}{N_1 - N_2}^{-2} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_1^2}} = 0.00000$$

$$R_3 - \frac{N_1}{N_1 - N_2}^{-1} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_1^2}} = 0.00000$$

$$R_4 - \frac{N_1}{N_1 - N_2}^{0} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_1^2}} = 0.00000$$

$$R_5 - \frac{N_1}{N_1 - N_2} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_1^2}} = 0.00000$$

$$R_6 - \frac{N_1}{N_1 - N_2}^{2} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_1^2}} = 0.00000$$

$$R_7 - \frac{N_1}{N_1 - N_2}^{3} \cdot \sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_1^2}} = 0.00000$$

$$\frac{N_1}{N_1 - N_2} = 1.49501 \qquad \sqrt{\frac{N_1 \cdot N_2 - N_2^2}{N_1^2}} = 0.47061$$

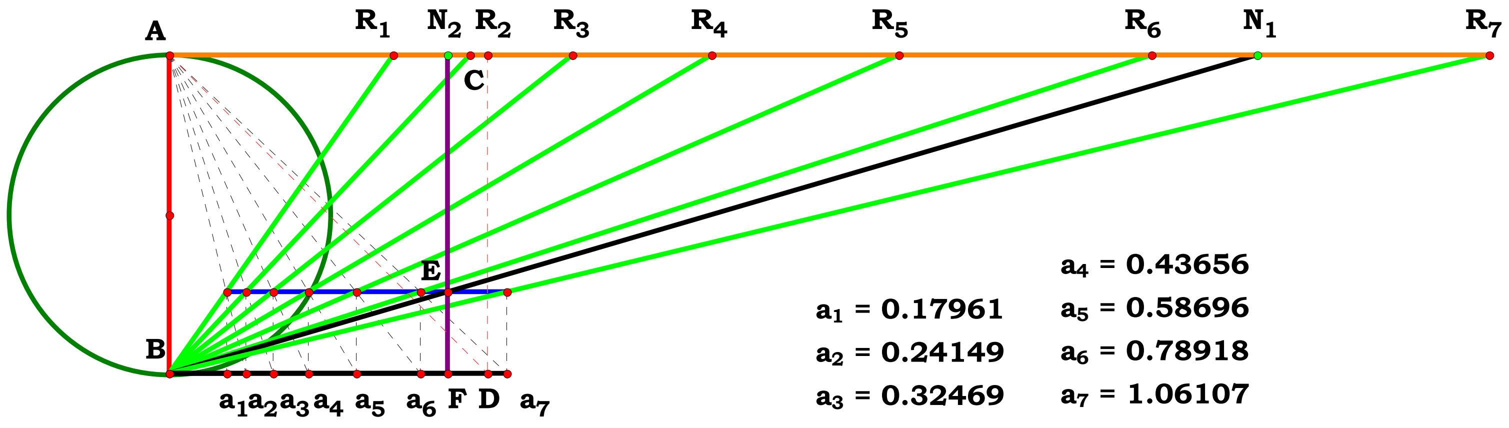
$\mathbf{AB} := 1$

$\mathbf{N_1} := 3.41178$

$\mathbf{N_2} := .87424$

Exponential Series Notebook 3-10

$N_1 = 3.41178$
$N_2 = 0.87424$
$R_1 = 0.70095$
$R_2 = 0.94245$
$R_3 = 1.26714$
$R_4 = 1.70370$
$R_5 = 2.29066$
$R_6 = 3.07983$
$R_7 = 4.14090$



$a_1 = 0.17961$
$a_2 = 0.24149$
$a_3 = 0.32469$
$a_4 = 0.43656$
$a_5 = 0.58696$
$a_6 = 0.78918$
$a_7 = 1.06107$

$$\mathbf{EF} := \frac{N_2}{N_1} \qquad a_4 := \sqrt{EF \cdot (1 - EF)}$$

$$a_3 := a_4 \cdot (1 - EF) \qquad a_2 := a_3 \cdot (1 - EF) \qquad a_1 := a_2 \cdot (1 - EF)$$

$$a_5 := \frac{a_4}{(1 - EF)} \qquad a_6 := \frac{a_5}{(1 - EF)} \qquad a_7 := \frac{a_6}{(1 - EF)}$$

$$R_1 := a_1 \cdot EF^{-1} \quad R_2 := a_2 \cdot EF^{-1} \quad R_3 := a_3 \cdot EF^{-1} \quad R_4 := a_4 \cdot EF^{-1} \quad R_5 := a_5 \cdot EF^{-1} \quad R_6 := a_6 \cdot EF^{-1} \quad R_7 := a_7 \cdot EF^{-1}$$

$$R_1 - \left(\frac{N_1}{N_1 - N_2}\right)^{-3} \cdot \sqrt{\frac{N_1 - N_2}{N_2}} = 0 \qquad R_2 - \left(\frac{N_1}{N_1 - N_2}\right)^{-2} \cdot \sqrt{\frac{N_1 - N_2}{N_2}} = 0 \qquad R_3 - \left(\frac{N_1}{N_1 - N_2}\right)^{-1} \cdot \sqrt{\frac{N_1 - N_2}{N_2}} = 0 \qquad R_4 - \left(\frac{N_1}{N_1 - N_2}\right)^{0} \cdot \sqrt{\frac{N_1 - N_2}{N_2}} = 0$$

$$R_5 - \left(\frac{N_1}{N_1 - N_2}\right)^{1} \cdot \sqrt{\frac{N_1 - N_2}{N_2}} = 0 \qquad R_6 - \left(\frac{N_1}{N_1 - N_2}\right)^{2} \cdot \sqrt{\frac{N_1 - N_2}{N_2}} = 0 \qquad R_7 - \left(\frac{N_1}{N_1 - N_2}\right)^{3} \cdot \sqrt{\frac{N_1 - N_2}{N_2}} = 0$$

$R_1 = 0.70095$

$R_2 = 0.942443$

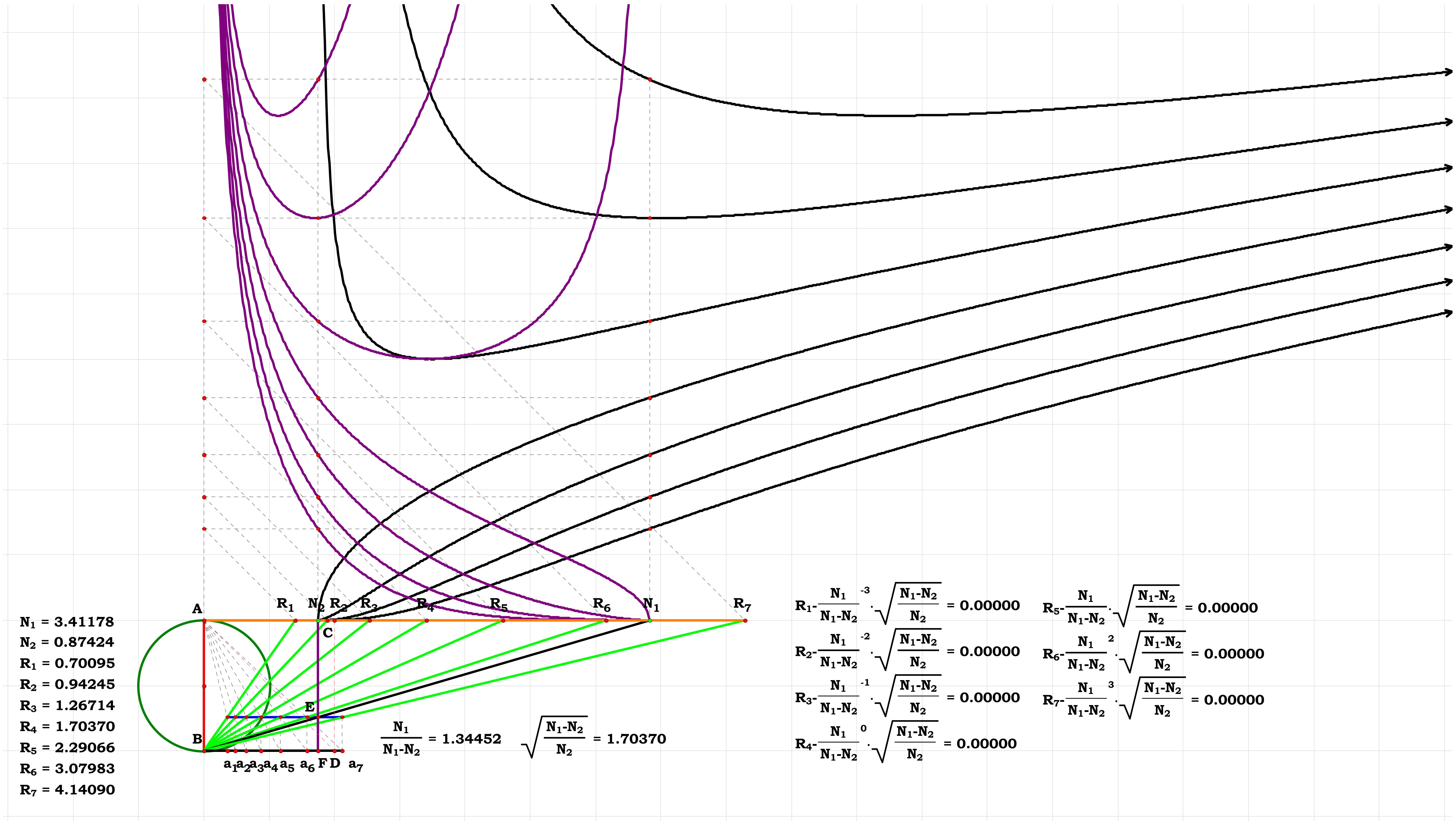
$R_3 = 1.267135$

$R_4 = 1.703692$

$R_5 = 2.290653$

$R_6 = 3.079834$

$R_7 = 4.140907$



N_1 = 3.41178
N_2 = 0.87424
R_1 = 0.70095
R_2 = 0.94245
R_3 = 1.26714
R_4 = 1.70370
R_5 = 2.29066
R_6 = 3.07983
R_7 = 4.14090

$$\frac{N_1}{N_1-N_2} = 1.34452 \qquad \sqrt{\frac{N_1-N_2}{N_2}} = 1.70370$$

$$R_1-\frac{N_1}{N_1-N_2}^{-3}\cdot\sqrt{\frac{N_1-N_2}{N_2}} = 0.00000$$

$$R_2-\frac{N_1}{N_1-N_2}^{-2}\cdot\sqrt{\frac{N_1-N_2}{N_2}} = 0.00000$$

$$R_3-\frac{N_1}{N_1-N_2}^{-1}\cdot\sqrt{\frac{N_1-N_2}{N_2}} = 0.00000$$

$$R_4-\frac{N_1}{N_1-N_2}^{0}\cdot\sqrt{\frac{N_1-N_2}{N_2}} = 0.00000$$

$$R_5-\frac{N_1}{N_1-N_2}\cdot\sqrt{\frac{N_1-N_2}{N_2}} = 0.00000$$

$$R_6-\frac{N_1}{N_1-N_2}^{2}\cdot\sqrt{\frac{N_1-N_2}{N_2}} = 0.00000$$

$$R_7-\frac{N_1}{N_1-N_2}^{3}\cdot\sqrt{\frac{N_1-N_2}{N_2}} = 0.00000$$

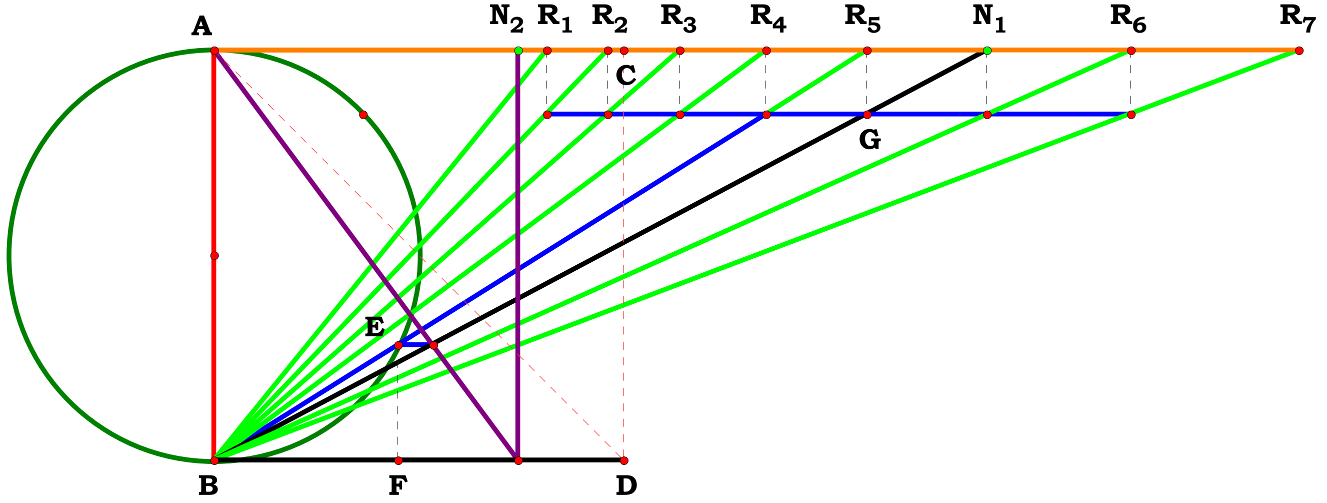
$AB := 1$

$N_1 := 1.88668$

$N_2 := .74332$

Exponential Series Notebook 3-12

$N_1 = 1.88668$
$N_2 = 0.74332$
$R_1 = 0.81004$
$R_2 = 0.95928$
$R_3 = 1.13601$
$R_4 = 1.34531$
$R_5 = 1.59316$
$R_6 = 2.23428$
$R_7 = 2.64591$



$$EF := \frac{N_2}{N_1 + N_2} \qquad BF := \sqrt{EF \cdot (1 - EF)}$$

$$R_5 := \frac{BF}{EF} \qquad GR_5 := \frac{(N_1 - R_5)}{N_1} \qquad GR_5 - \left(1 - \sqrt{\frac{1}{N_1 \cdot N_2}}\right) = 0$$

$$R_4 := R_5 \cdot (1 - GR_5) \qquad R_3 := R_4 \cdot (1 - GR_5) \qquad R_2 := R_3 \cdot (1 - GR_5)$$

$$R_1 := R_2 \cdot (1 - GR_5) \qquad R_6 := \frac{N_1}{(1 - GR_5)} \qquad R_7 := \frac{R_6}{(1 - GR_5)}$$

$$R_1 - \sqrt{\frac{N_1}{N_2}} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{-4} = 0 \qquad R_2 - \sqrt{\frac{N_1}{N_2}} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{-3} = 0 \qquad R_3 - \sqrt{\frac{N_1}{N_2}} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{-2} = 0 \qquad R_4 - \sqrt{\frac{N_1}{N_2}} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{-1} = 0$$

$$R_5 - \sqrt{\frac{N_1}{N_2}} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{0} = 0 \qquad N_1 - \sqrt{\frac{N_1}{N_2}} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{1} = 0 \qquad R_6 - \sqrt{\frac{N_1}{N_2}} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{2} = 0 \qquad R_7 - \sqrt{\frac{N_1}{N_2}} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{3} = 0$$

$R_1 = 0.810052$

$R_2 = 0.95929$

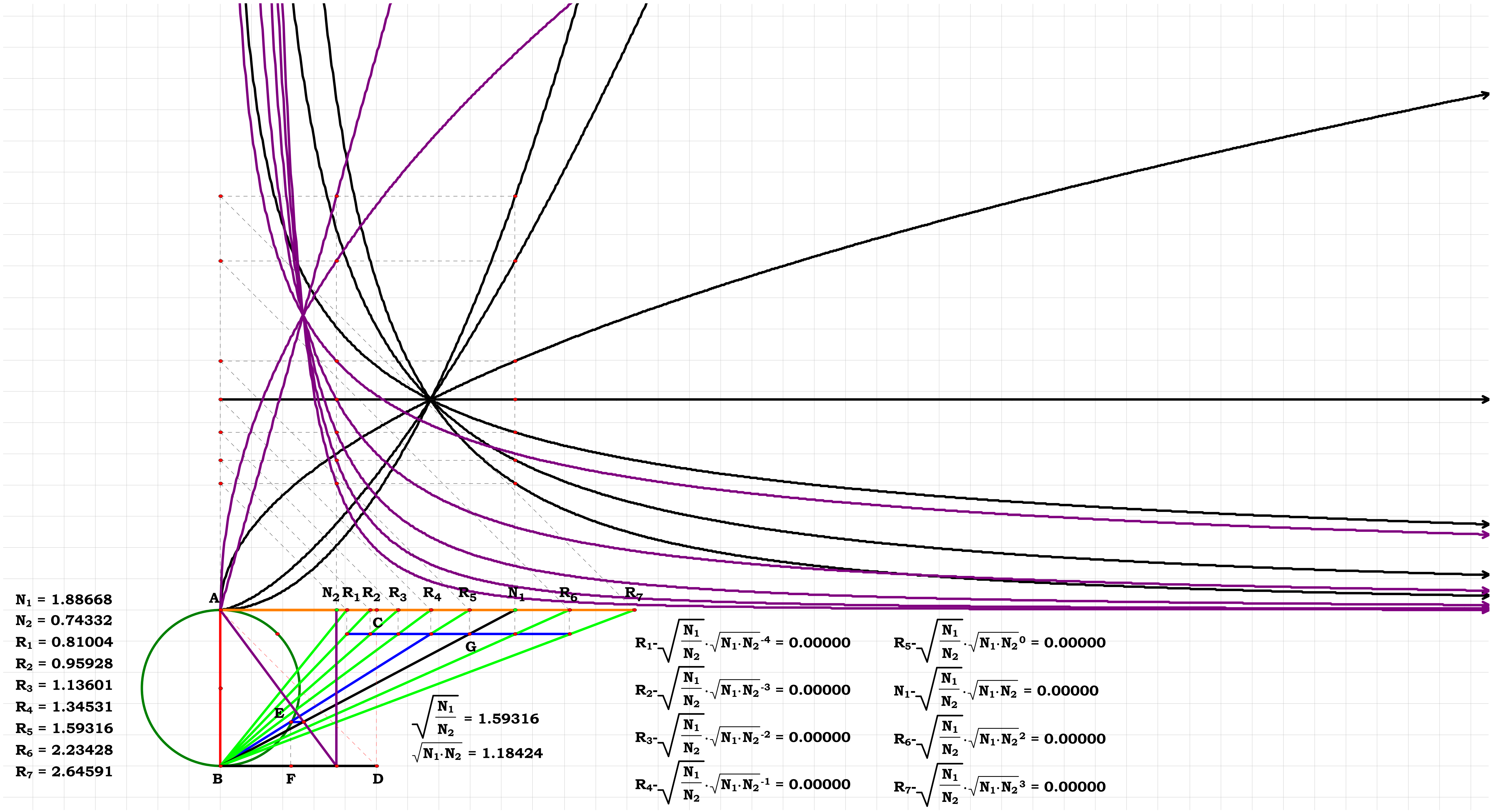
$R_3 = 1.136023$

$R_4 = 1.345316$

$R_5 = 1.593167$

$R_6 = 2.234268$

$R_7 = 2.645893$



N_1 = 1.88668
N_2 = 0.74332
R_1 = 0.81004
R_2 = 0.95928
R_3 = 1.13601
R_4 = 1.34531
R_5 = 1.59316
R_6 = 2.23428
R_7 = 2.64591

$$\sqrt{\frac{N_1}{N_2}} = 1.59316$$

$$\sqrt{N_1 \cdot N_2} = 1.18424$$

$$R_1 - \sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{-4} = 0.00000$$

$$R_2 - \sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{-3} = 0.00000$$

$$R_3 - \sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{-2} = 0.00000$$

$$R_4 - \sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{-1} = 0.00000$$

$$R_5 - \sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{0} = 0.00000$$

$$N_1 - \sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2} = 0.00000$$

$$R_6 - \sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{2} = 0.00000$$

$$R_7 - \sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{3} = 0.00000$$

$AB := 1$

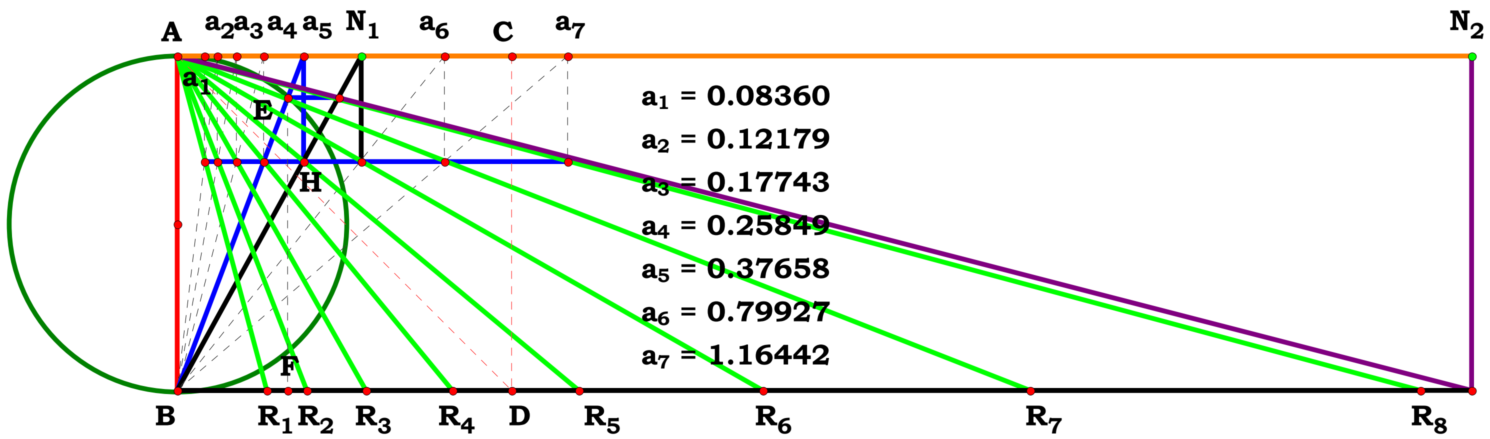
$N_1 := .54862$

$N_2 := 3.86863$

Exponential Series Notebook 3-13

Starting values from the previous plate.

$N_1 = 0.54862$
$N_2 = 3.86863$
$R_1 = 0.26658$
$R_2 = 0.38837$
$R_3 = 0.56580$
$R_4 = 0.82429$
$R_5 = 1.20087$
$R_6 = 1.74950$
$R_7 = 2.54876$
$R_8 = 3.71318$



$a_1 = 0.08360$
$a_2 = 0.12179$
$a_3 = 0.17743$
$a_4 = 0.25849$
$a_5 = 0.37658$
$a_6 = 0.79927$
$a_7 = 1.16442$

$$a_1 := \sqrt{\frac{N_1}{N_2}} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{-4} \qquad a_2 := \sqrt{\frac{N_1}{N_2}} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{-3}$$

$$a_3 := \sqrt{\frac{N_1}{N_2}} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{-2} \qquad a_4 := \sqrt{\frac{N_1}{N_2}} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{-1} \qquad a_5 := \sqrt{\frac{N_1}{N_2}} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{0}$$

$$N_1 - \sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2} = 0 \qquad a_6 := \sqrt{\frac{N_1}{N_2}} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{2} \qquad a_7 := \sqrt{\frac{N_1}{N_2}} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{3} \qquad Ha_5 := 1 - \sqrt{\frac{1}{N_1 \cdot N_2}}$$

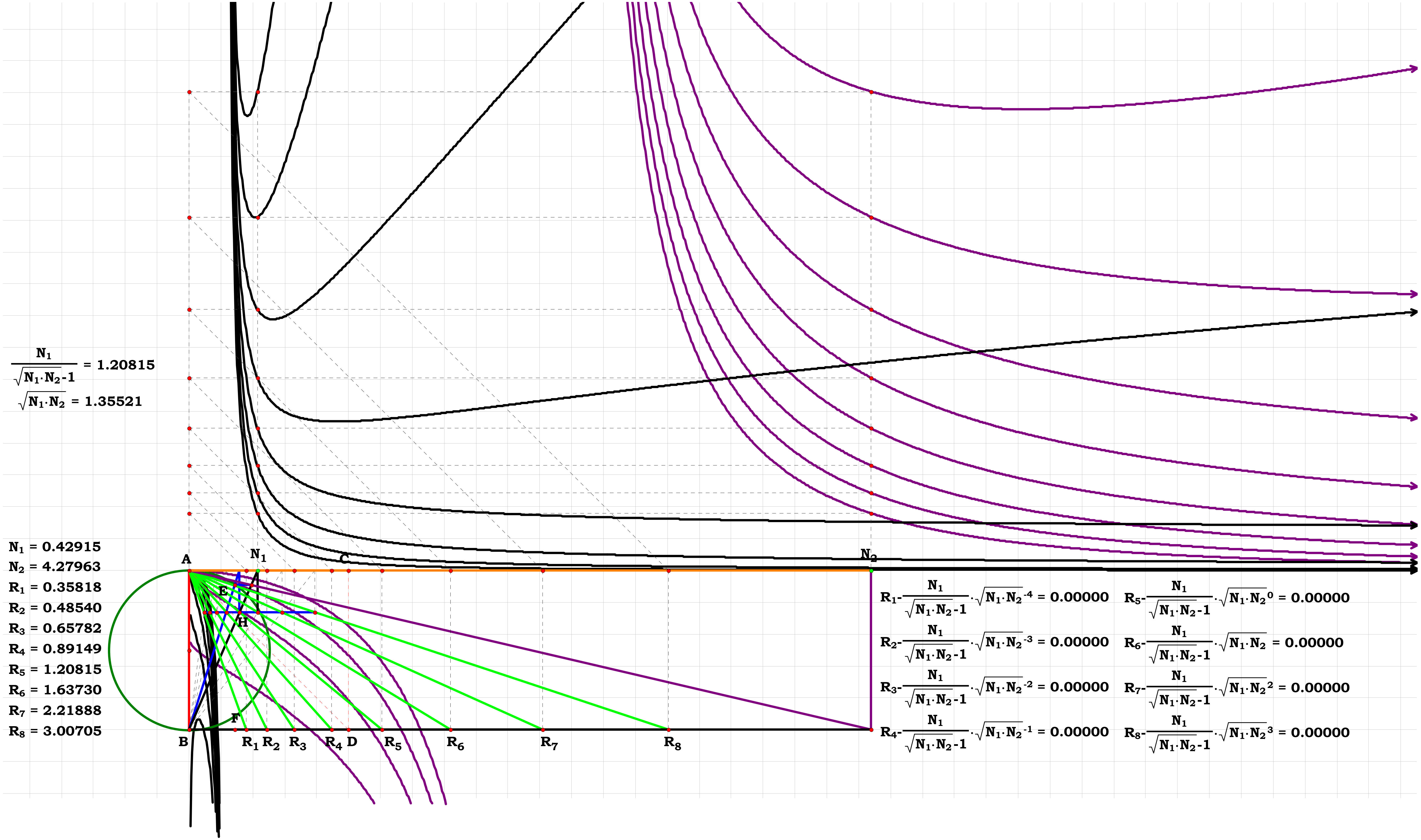
$$R_1 := \frac{a_1}{Ha_5} \quad R_2 := \frac{a_2}{Ha_5} \quad R_3 := \frac{a_3}{Ha_5} \quad R_4 := \frac{a_4}{Ha_5} \quad R_5 := \frac{a_5}{Ha_5} \quad R_6 := \frac{N_1}{Ha_5} \quad R_7 := \frac{a_6}{Ha_5} \quad R_8 := \frac{a_7}{Ha_5}$$

$$R_1 - \frac{N_1}{\sqrt{N_1 \cdot N_2} - 1} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{-4} = 0 \qquad R_2 - \frac{N_1}{\sqrt{N_1 \cdot N_2} - 1} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{-3} = 0 \qquad R_3 - \frac{N_1}{\sqrt{N_1 \cdot N_2} - 1} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{-2} = 0 \qquad R_4 - \frac{N_1}{\sqrt{N_1 \cdot N_2} - 1} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{-1} = 0$$

$$R_5 - \frac{N_1}{\sqrt{N_1 \cdot N_2} - 1} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{0} = 0 \qquad R_6 - \frac{N_1}{\sqrt{N_1 \cdot N_2} - 1} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{1} = 0 \qquad R_7 - \frac{N_1}{\sqrt{N_1 \cdot N_2} - 1} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{2} = 0 \qquad R_8 - \frac{N_1}{\sqrt{N_1 \cdot N_2} - 1} \cdot \left(\sqrt{N_1 \cdot N_2}\right)^{3} = 0$$

$R_1 = 0.266589$
$R_2 = 0.388379$
$R_3 = 0.56581$
$R_4 = 0.824299$

$R_5 = 1.200879$
$R_6 = 1.749499$
$R_7 = 2.548756$
$R_8 = 3.713151$



$\frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} = 1.20815$
$\sqrt{N_1 \cdot N_2} = 1.35521$
$N_1 = 0.42915$
$N_2 = 4.27963$
$R_1 = 0.35818$
$R_2 = 0.48540$
$R_3 = 0.65782$
$R_4 = 0.89149$
$R_5 = 1.20815$
$R_6 = 1.63730$
$R_7 = 2.21888$
$R_8 = 3.00705$
A
N_1
C
N_2
E
H
F
B
R_1
R_2
R_3
R_4
D
R_5
R_6
R_7
R_8
$R_1 - \frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^{-4} = 0.00000$
$R_2 - \frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^{-3} = 0.00000$
$R_3 - \frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^{-2} = 0.00000$
$R_4 - \frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^{-1} = 0.00000$
$R_5 - \frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^{0} = 0.00000$
$R_6 - \frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2} = 0.00000$
$R_7 - \frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^{2} = 0.00000$
$R_8 - \frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^{3} = 0.00000$

$AB := 1$

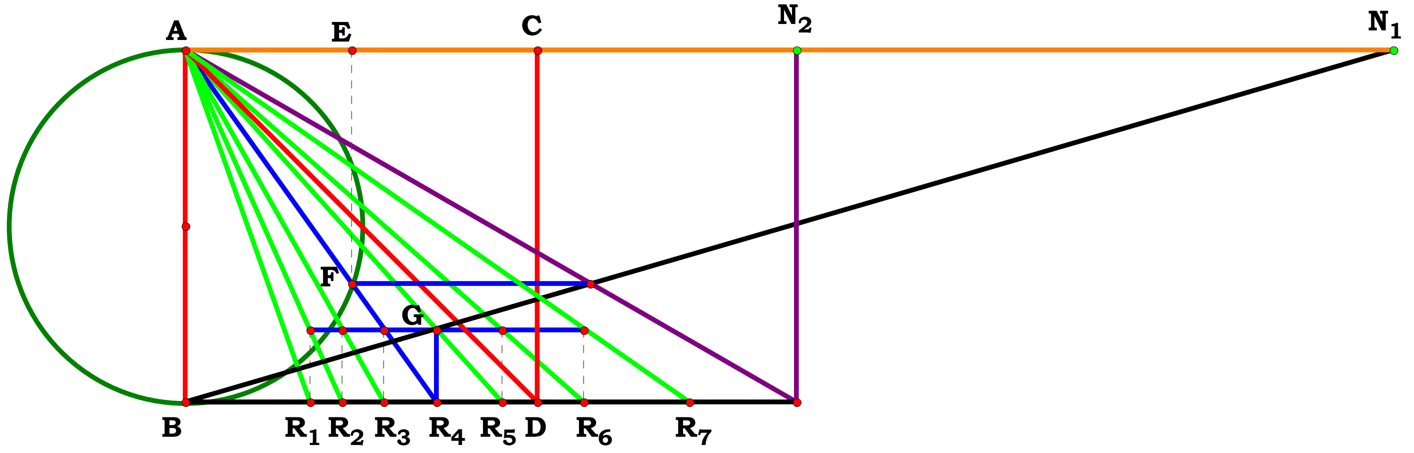
$N_1 := 3.42768$

$N_2 := 1.73283$

Exponential Series Notebook 3-14

$EF := \dfrac{N_1}{N_1 + N_2} \qquad AE := \sqrt{EF \cdot (1 - EF)}$

$N_1 = 3.42768$
$N_2 = 1.73283$
$R_1 = 0.35399$
$R_2 = 0.44663$
$R_3 = 0.56353$
$R_4 = 0.71101$
$R_5 = 0.89710$
$R_6 = 1.13189$
$R_7 = 1.42814$



$R_4 := \dfrac{AE}{EF} \qquad GR_4 := \dfrac{R_4}{N_1} \qquad R_3 := R_4 \cdot (1 - GR_4)$

$R_2 := R_3 \cdot (1 - GR_4) \qquad R_1 := R_2 \cdot (1 - GR_4) \qquad R_5 := \dfrac{R_4}{(1 - GR_4)} \qquad R_6 := \dfrac{R_5}{(1 - GR_4)} \qquad R_7 := \dfrac{R_6}{(1 - GR_4)}$

$$R_1 - \left[\frac{{N_1}^2}{\left({N_1}^2 - \sqrt{N_1 \cdot N_2}\right)}\right]^{-3} \cdot \frac{\sqrt{N_1 \cdot N_2}}{N_1} = 0 \qquad R_2 - \left[\frac{{N_1}^2}{\left({N_1}^2 - \sqrt{N_1 \cdot N_2}\right)}\right]^{-2} \cdot \frac{\sqrt{N_1 \cdot N_2}}{N_1} = 0 \qquad R_3 - \left[\frac{{N_1}^2}{\left({N_1}^2 - \sqrt{N_1 \cdot N_2}\right)}\right]^{-1} \cdot \frac{\sqrt{N_1 \cdot N_2}}{N_1} = 0$$

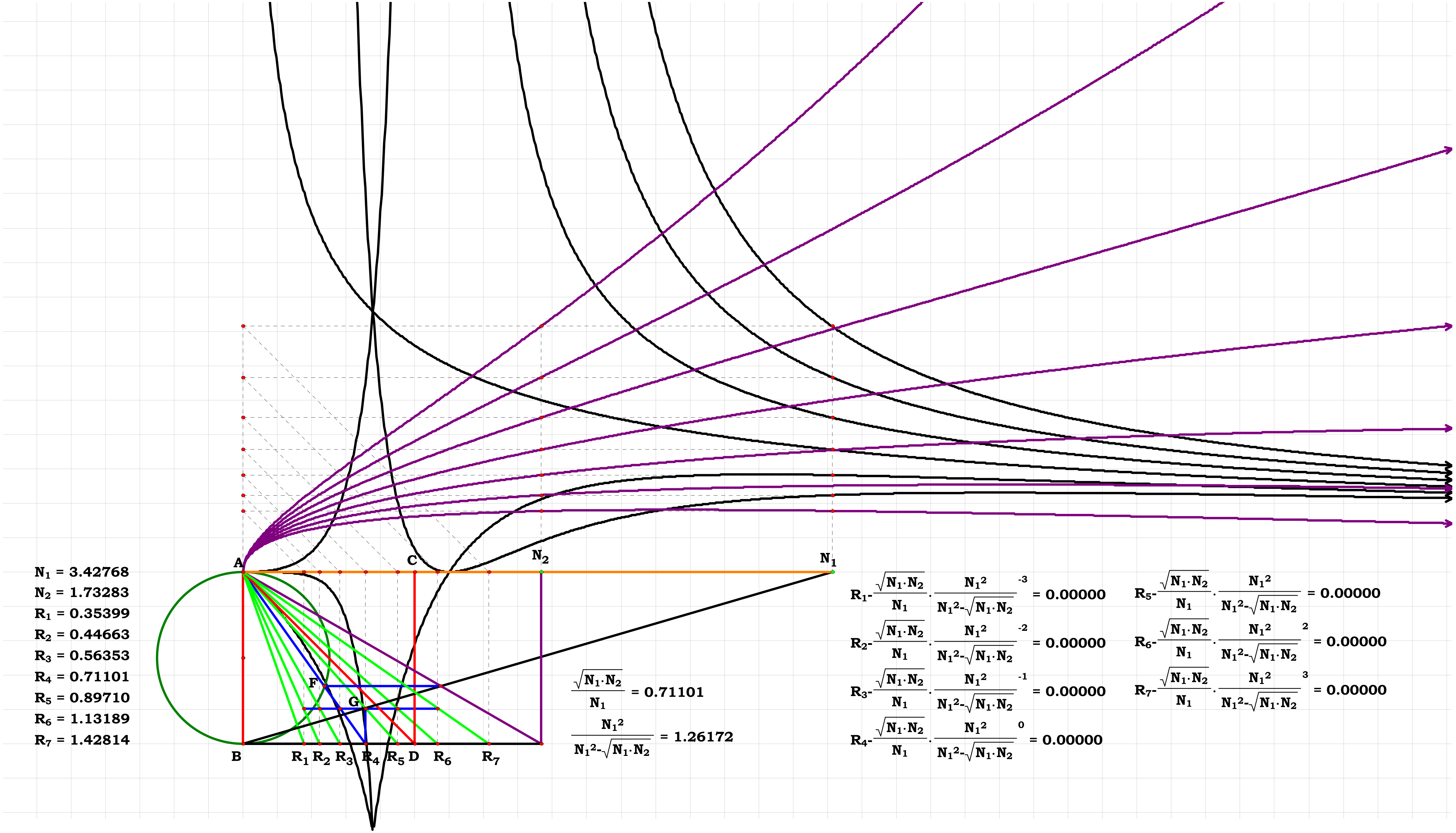
$$R_4 - \left[\frac{{N_1}^2}{\left({N_1}^2 - \sqrt{N_1 \cdot N_2}\right)}\right]^{0} \cdot \frac{\sqrt{N_1 \cdot N_2}}{N_1} = 0 \qquad R_5 - \left[\frac{{N_1}^2}{\left({N_1}^2 - \sqrt{N_1 \cdot N_2}\right)}\right]^{1} \cdot \frac{\sqrt{N_1 \cdot N_2}}{N_1} = 0 \qquad R_6 - \left[\frac{{N_1}^2}{\left({N_1}^2 - \sqrt{N_1 \cdot N_2}\right)}\right]^{2} \cdot \frac{\sqrt{N_1 \cdot N_2}}{N_1} = 0$$

$$R_7 - \left[\frac{{N_1}^2}{\left({N_1}^2 - \sqrt{N_1 \cdot N_2}\right)}\right]^{3} \cdot \frac{\sqrt{N_1 \cdot N_2}}{N_1} = 0$$

$R_1 = 0.353986$
$R_2 = 0.446632$
$R_3 = 0.563526$
$R_4 = 0.711013$
$R_5 = 0.897102$
$R_6 = 1.131894$
$R_7 = 1.428136$

$$R_1 - \frac{\sqrt{N_1 \cdot N_2} \cdot \left({N_1}^2 - \sqrt{N_1 \cdot N_2}\right)^3}{{N_1}^7} = 0$$

$$R_7 - \frac{{N_1}^5 \cdot \sqrt{N_1 \cdot N_2}}{\left({N_1}^2 - \sqrt{N_1 \cdot N_2}\right)^3} = 0$$



$N_1 = 3.42768$

$N_2 = 1.73283$

$R_1 = 0.35399$

$R_2 = 0.44663$

$R_3 = 0.56353$

$R_4 = 0.71101$

$R_5 = 0.89710$

$R_6 = 1.13189$

$R_7 = 1.42814$

$$\frac{\sqrt{N_1 \cdot N_2}}{N_1} = 0.71101$$

$$\frac{N_1^2}{N_1^2 - \sqrt{N_1 \cdot N_2}} = 1.26172$$

$$R_1 - \frac{\sqrt{N_1 \cdot N_2}}{N_1} \cdot \frac{N_1^2}{N_1^2 - \sqrt{N_1 \cdot N_2}}^{-3} = 0.00000$$

$$R_2 - \frac{\sqrt{N_1 \cdot N_2}}{N_1} \cdot \frac{N_1^2}{N_1^2 - \sqrt{N_1 \cdot N_2}}^{-2} = 0.00000$$

$$R_3 - \frac{\sqrt{N_1 \cdot N_2}}{N_1} \cdot \frac{N_1^2}{N_1^2 - \sqrt{N_1 \cdot N_2}}^{-1} = 0.00000$$

$$R_4 - \frac{\sqrt{N_1 \cdot N_2}}{N_1} \cdot \frac{N_1^2}{N_1^2 - \sqrt{N_1 \cdot N_2}}^{0} = 0.00000$$

$$R_5 - \frac{\sqrt{N_1 \cdot N_2}}{N_1} \cdot \frac{N_1^2}{N_1^2 - \sqrt{N_1 \cdot N_2}} = 0.00000$$

$$R_6 - \frac{\sqrt{N_1 \cdot N_2}}{N_1} \cdot \frac{N_1^2}{N_1^2 - \sqrt{N_1 \cdot N_2}}^{2} = 0.00000$$

$$R_7 - \frac{\sqrt{N_1 \cdot N_2}}{N_1} \cdot \frac{N_1^2}{N_1^2 - \sqrt{N_1 \cdot N_2}}^{3} = 0.00000$$

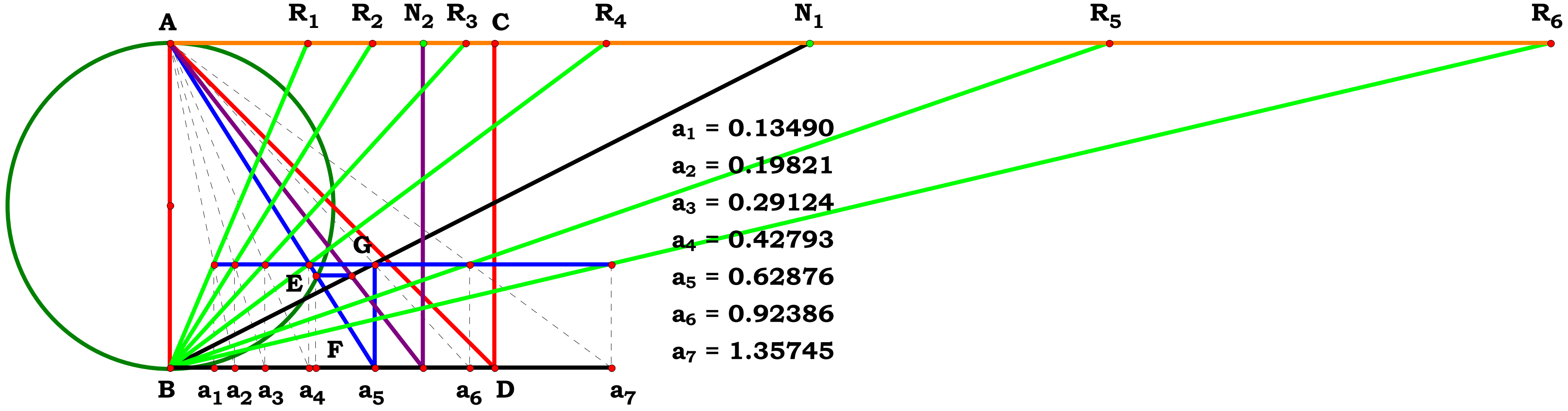
$AB := 1$

$N_1 := 1.96848$

$N_2 := .77822$

Exponential Series Notebook 3-15

$N_1 = 1.96848$
$N_2 = 0.77822$
$R_1 = 0.42234$
$R_2 = 0.62055$
$R_3 = 0.91179$
$R_4 = 1.33972$
$R_5 = 2.89234$
$R_6 = 4.24978$



$a_1 = 0.13490$
$a_2 = 0.19821$
$a_3 = 0.29124$
$a_4 = 0.42793$
$a_5 = 0.62876$
$a_6 = 0.92386$
$a_7 = 1.35745$

$$EF := \frac{N_2}{N_1 + N_2} \qquad BF := \sqrt{EF \cdot (1 - EF)}$$

$$a_5 := \frac{BF}{1 - EF} \qquad Ga := \frac{a_5}{N_1} \qquad a_4 := a_5 \cdot (1 - Ga)$$

$$a_3 := a_4 \cdot (1 - Ga) \qquad a_2 := a_3 \cdot (1 - Ga) \qquad a_1 := a_2 \cdot (1 - Ga) \qquad a_6 := \frac{a_5}{(1 - Ga)} \qquad a_7 := \frac{a_6}{(1 - Ga)}$$

$$R_4 := \frac{a_4}{Ga} \qquad R_3 := \frac{a_3}{Ga} \qquad R_2 := \frac{a_2}{Ga} \qquad R_1 := \frac{a_1}{Ga} \qquad R_5 := \frac{a_6}{Ga} \qquad R_6 := \frac{a_7}{Ga}$$

$$R_1 - N_1 \cdot \left(\frac{N_1^{\,2}}{N_1^{\,2} - \sqrt{N_1 \cdot N_2}}\right)^{-4} = 0 \qquad R_2 - N_1 \cdot \left(\frac{N_1^{\,2}}{N_1^{\,2} - \sqrt{N_1 \cdot N_2}}\right)^{-3} = 0 \qquad R_3 - N_1 \cdot \left(\frac{N_1^{\,2}}{N_1^{\,2} - \sqrt{N_1 \cdot N_2}}\right)^{-2} = 0$$

$$R_4 - N_1 \cdot \left(\frac{N_1^{\,2}}{N_1^{\,2} - \sqrt{N_1 \cdot N_2}}\right)^{-1} = 0 \qquad R_5 - N_1 \cdot \left(\frac{N_1^{\,2}}{N_1^{\,2} - \sqrt{N_1 \cdot N_2}}\right)^{1} = 0 \qquad R_6 - N_1 \cdot \left(\frac{N_1^{\,2}}{N_1^{\,2} - \sqrt{N_1 \cdot N_2}}\right)^{2} = 0$$

$R_1 = 0.422339$

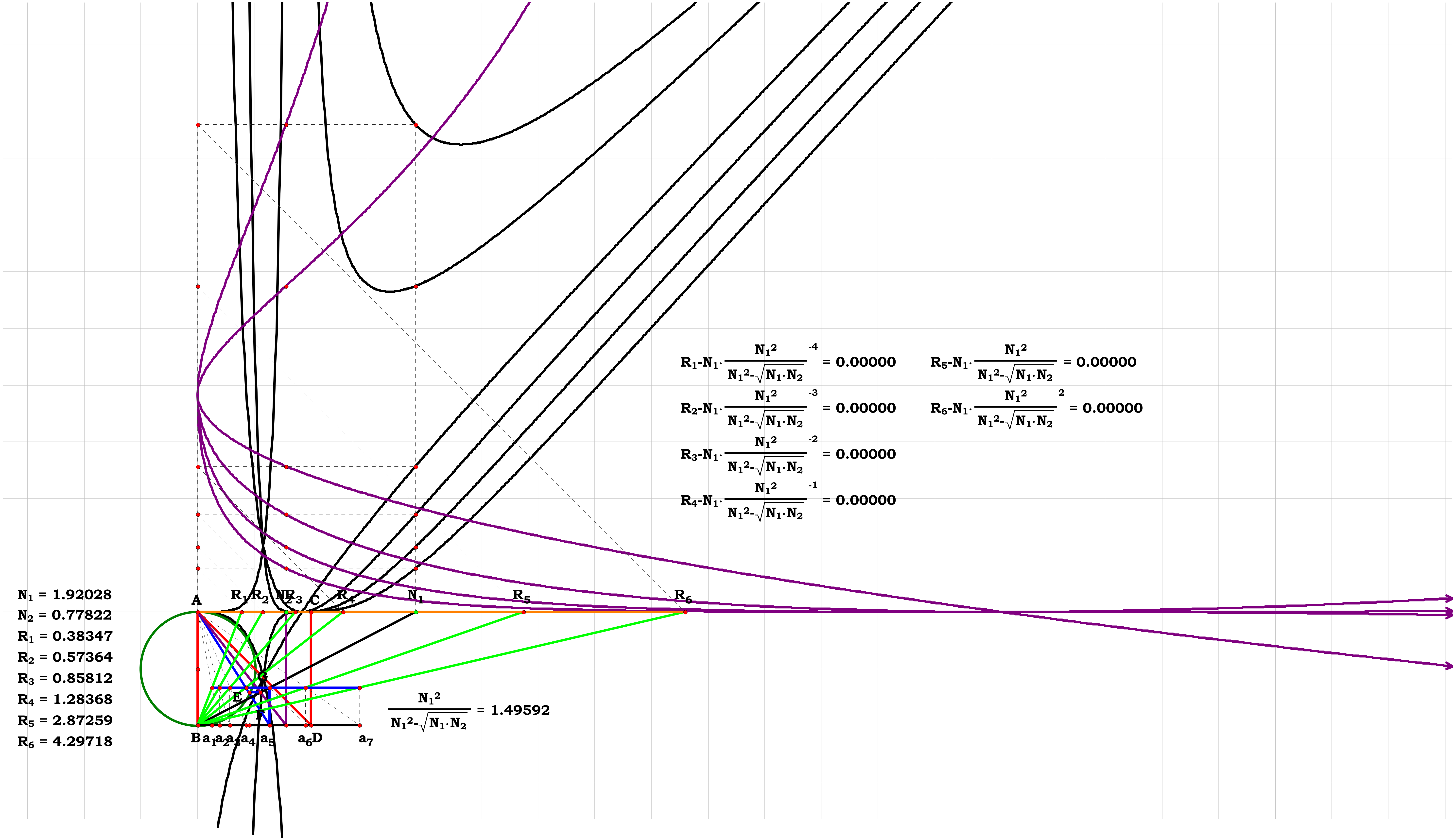
$R_2 = 0.620553$

$R_3 = 0.911793$

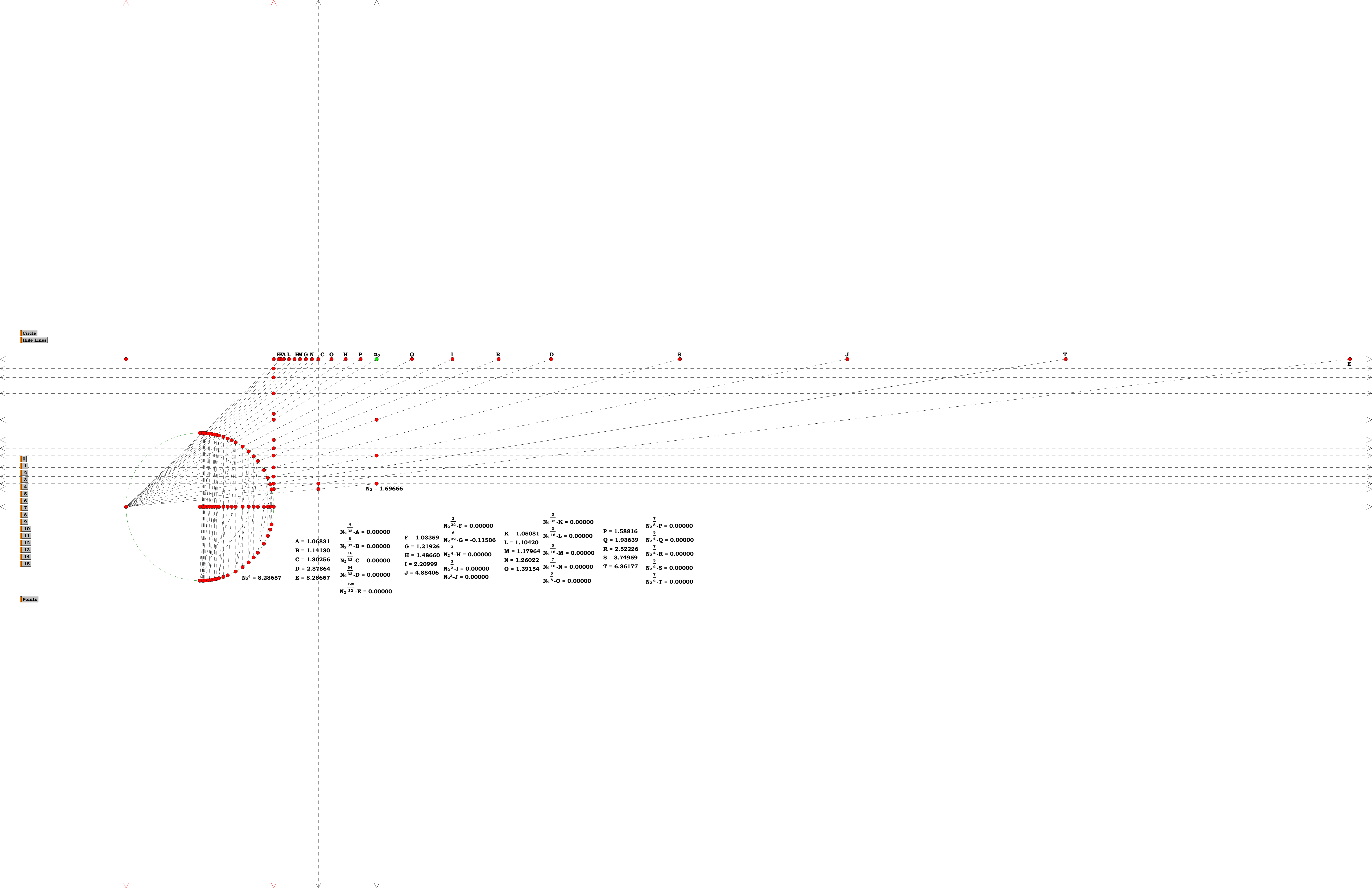
$R_4 = 1.339719$

$R_5 = 2.892333$

$R_6 = 4.249772$



$N_1 = 1.92028$
$N_2 = 0.77822$
$R_1 = 0.38347$
$R_2 = 0.57364$
$R_3 = 0.85812$
$R_4 = 1.28368$
$R_5 = 2.87259$
$R_6 = 4.29718$
A
R_1
R_2
N_2
R_3
C
R_4
N_1
R_5
R_6
G
E
F
B
a_1
a_2
a_3
a_4
a_5
a_6
D
a_7
$R_1 - N_1 \cdot \left(\frac{N_1^2}{N_1^2 - \sqrt{N_1 \cdot N_2}} \right)^{-4} = 0.00000$
$R_2 - N_1 \cdot \left(\frac{N_1^2}{N_1^2 - \sqrt{N_1 \cdot N_2}} \right)^{-3} = 0.00000$
$R_3 - N_1 \cdot \left(\frac{N_1^2}{N_1^2 - \sqrt{N_1 \cdot N_2}} \right)^{-2} = 0.00000$
$R_4 - N_1 \cdot \left(\frac{N_1^2}{N_1^2 - \sqrt{N_1 \cdot N_2}} \right)^{-1} = 0.00000$
$R_5 - N_1 \cdot \frac{N_1^2}{N_1^2 - \sqrt{N_1 \cdot N_2}} = 0.00000$
$R_6 - N_1 \cdot \left(\frac{N_1^2}{N_1^2 - \sqrt{N_1 \cdot N_2}} \right)^{2} = 0.00000$
$\frac{N_1^2}{N_1^2 - \sqrt{N_1 \cdot N_2}} = 1.49592$



$A = 1.06831$
$B = 1.14130$
$C = 1.30256$
$D = 2.87864$
$E = 8.28657$

$N_2^{\frac{4}{32}} - A = 0.00000$
$N_2^{\frac{8}{32}} - B = 0.00000$
$N_2^{\frac{16}{32}} - C = 0.00000$
$N_2^{\frac{64}{32}} - D = 0.00000$
$N_2^{\frac{128}{32}} - E = 0.00000$

$F = 1.03359$
$G = 1.21926$
$H = 1.48660$
$I = 2.20999$
$J = 4.88406$

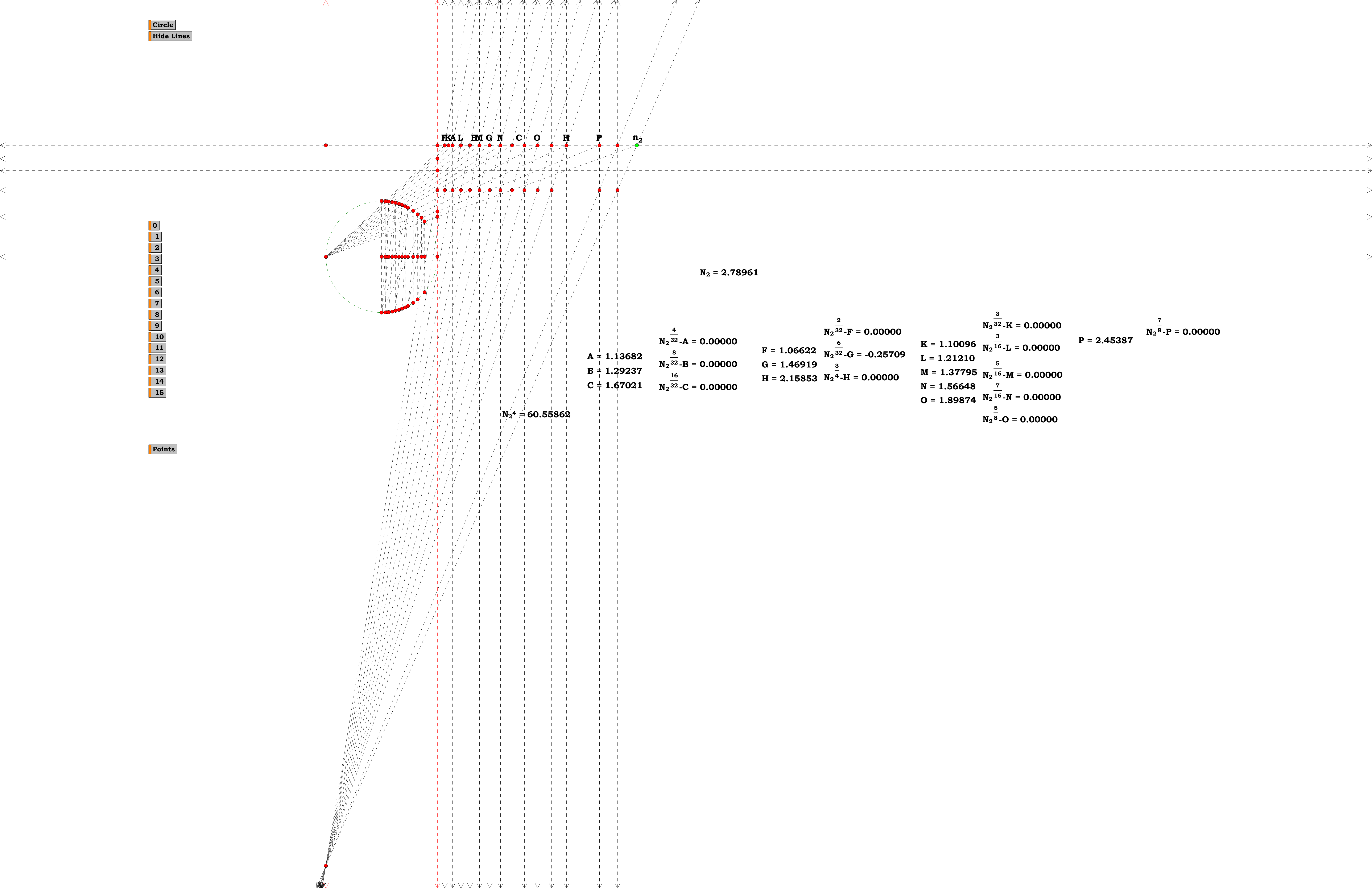
$N_2^{\frac{2}{32}} - F = 0.00000$
$N_2^{\frac{6}{32}} - G = -0.11506$
$N_2^{\frac{3}{4}} - H = 0.00000$
$N_2^{\frac{3}{2}} - I = 0.00000$
$N_2^{3} - J = 0.00000$

$K = 1.05081$
$L = 1.10420$
$M = 1.17964$
$N = 1.26022$
$O = 1.39154$

$N_2^{\frac{3}{32}} - K = 0.00000$
$N_2^{\frac{3}{16}} - L = 0.00000$
$N_2^{\frac{5}{16}} - M = 0.00000$
$N_2^{\frac{7}{16}} - N = 0.00000$
$N_2^{\frac{5}{8}} - O = 0.00000$

$P = 1.58816$
$Q = 1.93639$
$R = 2.52226$
$S = 3.74959$
$T = 6.36177$

$N_2^{\frac{7}{8}} - P = 0.00000$
$N_2^{\frac{5}{4}} - Q = 0.00000$
$N_2^{\frac{7}{4}} - R = 0.00000$
$N_2^{\frac{5}{2}} - S = 0.00000$
$N_2^{\frac{7}{2}} - T = 0.00000$



$N_2 = 2.78961$

$N_2^4 = 60.55862$

$A = 1.13682$

$B = 1.29237$

$C = 1.67021$

$N_2^{\frac{4}{32}} - A = 0.00000$

$N_2^{\frac{8}{32}} - B = 0.00000$

$N_2^{\frac{16}{32}} - C = 0.00000$

$F = 1.06622$

$G = 1.46919$

$H = 2.15853$

$N_2^{\frac{2}{32}} - F = 0.00000$

$N_2^{\frac{6}{32}} - G = -0.25709$

$N_2^{\frac{3}{4}} - H = 0.00000$

$K = 1.10096$

$L = 1.21210$

$M = 1.37795$

$N = 1.56648$

$O = 1.89874$

$N_2^{\frac{3}{32}} - K = 0.00000$

$N_2^{\frac{3}{16}} - L = 0.00000$

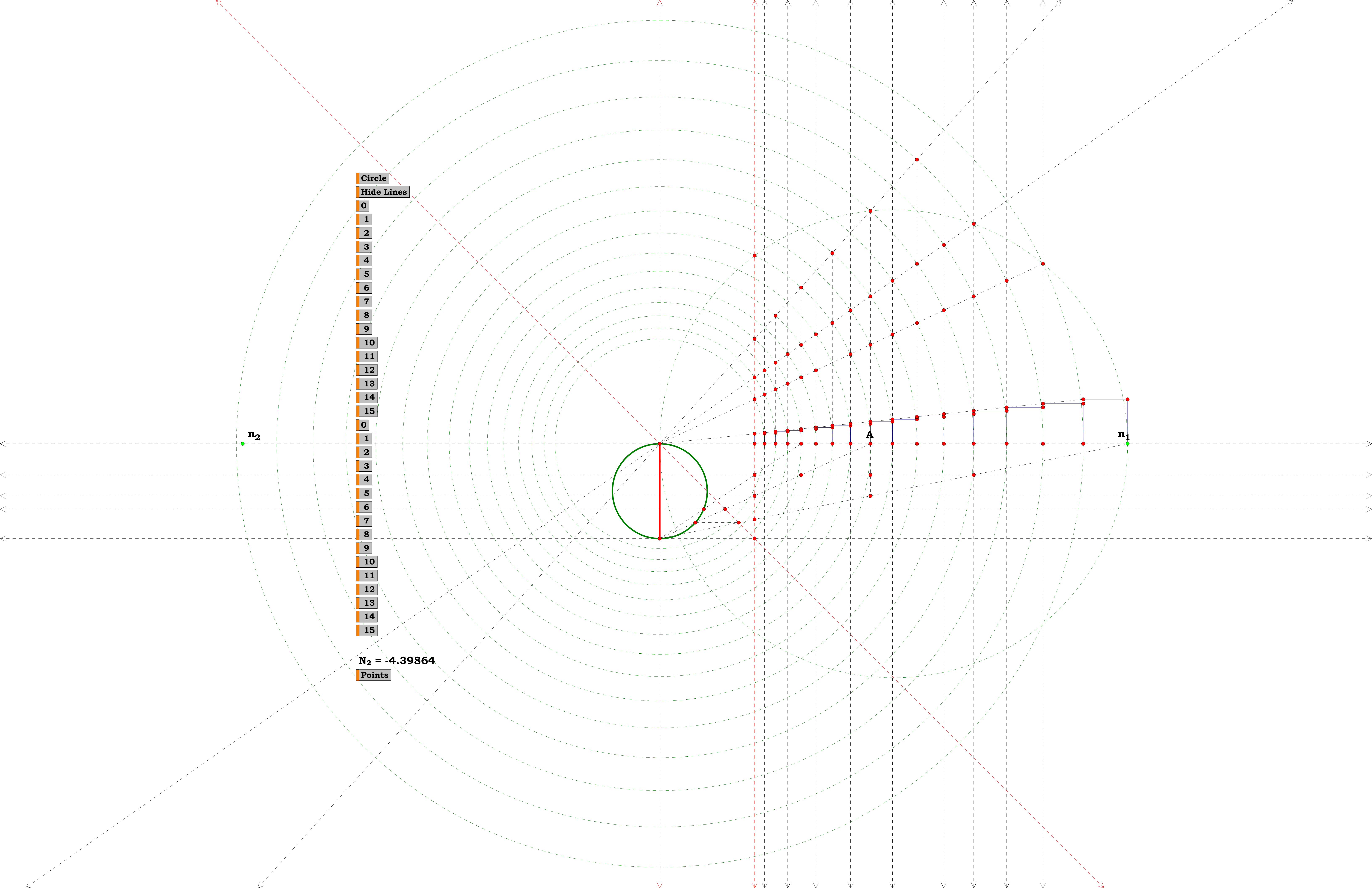
$N_2^{\frac{5}{16}} - M = 0.00000$

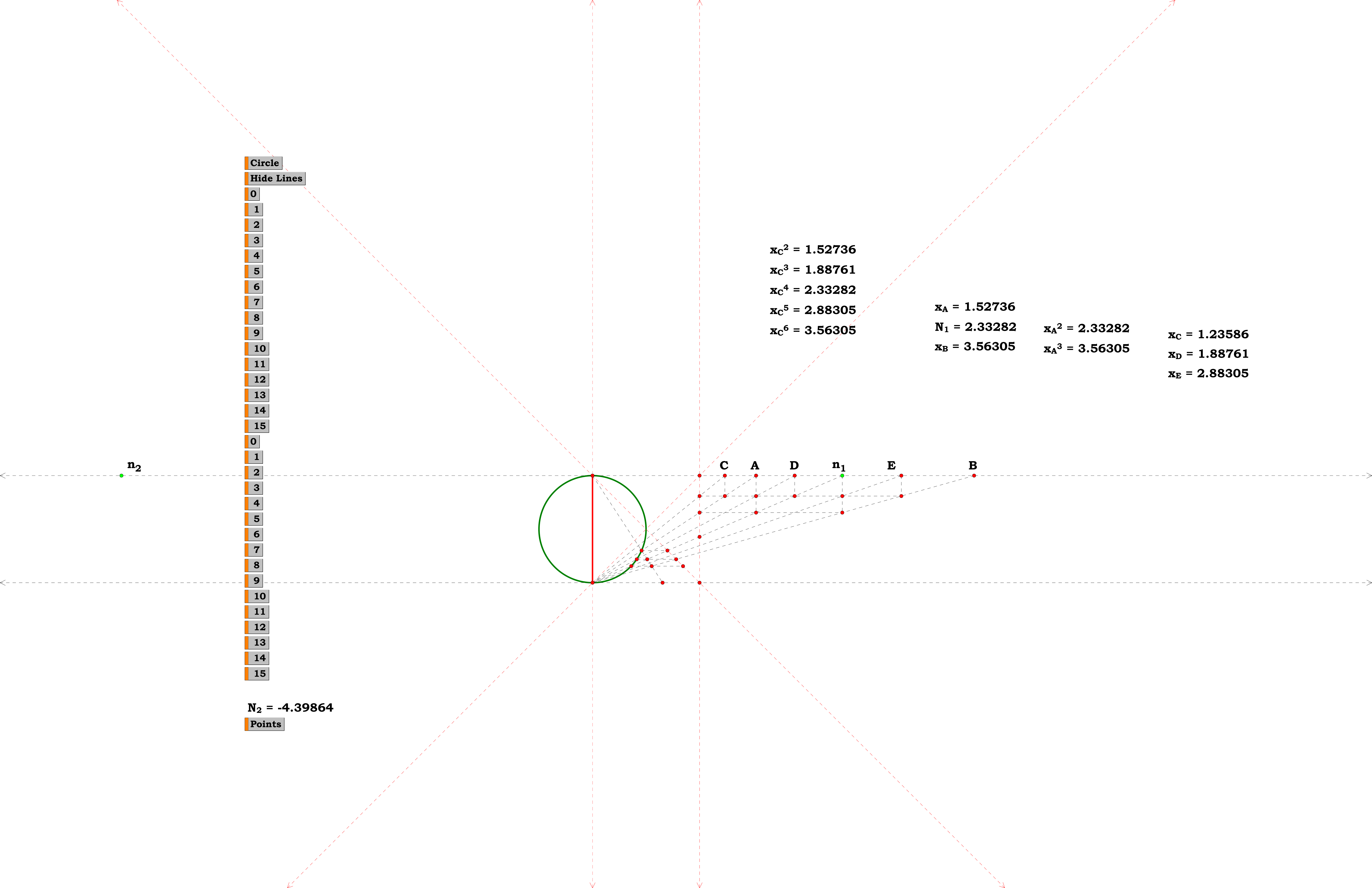
$N_2^{\frac{7}{16}} - N = 0.00000$

$N_2^{\frac{5}{8}} - O = 0.00000$

$P = 2.45387$

$N_2^{\frac{7}{8}} - P = 0.00000$


Circle
Hide Lines
N_2 = -4.39864
Points
n_2
A
n_1



$x_C{}^2 = 1.52736$

$x_C{}^3 = 1.88761$

$x_C{}^4 = 2.33282$

$x_C{}^5 = 2.88305$

$x_C{}^6 = 3.56305$

$x_A = 1.52736$

$N_1 = 2.33282$

$x_B = 3.56305$

$x_A{}^2 = 2.33282$

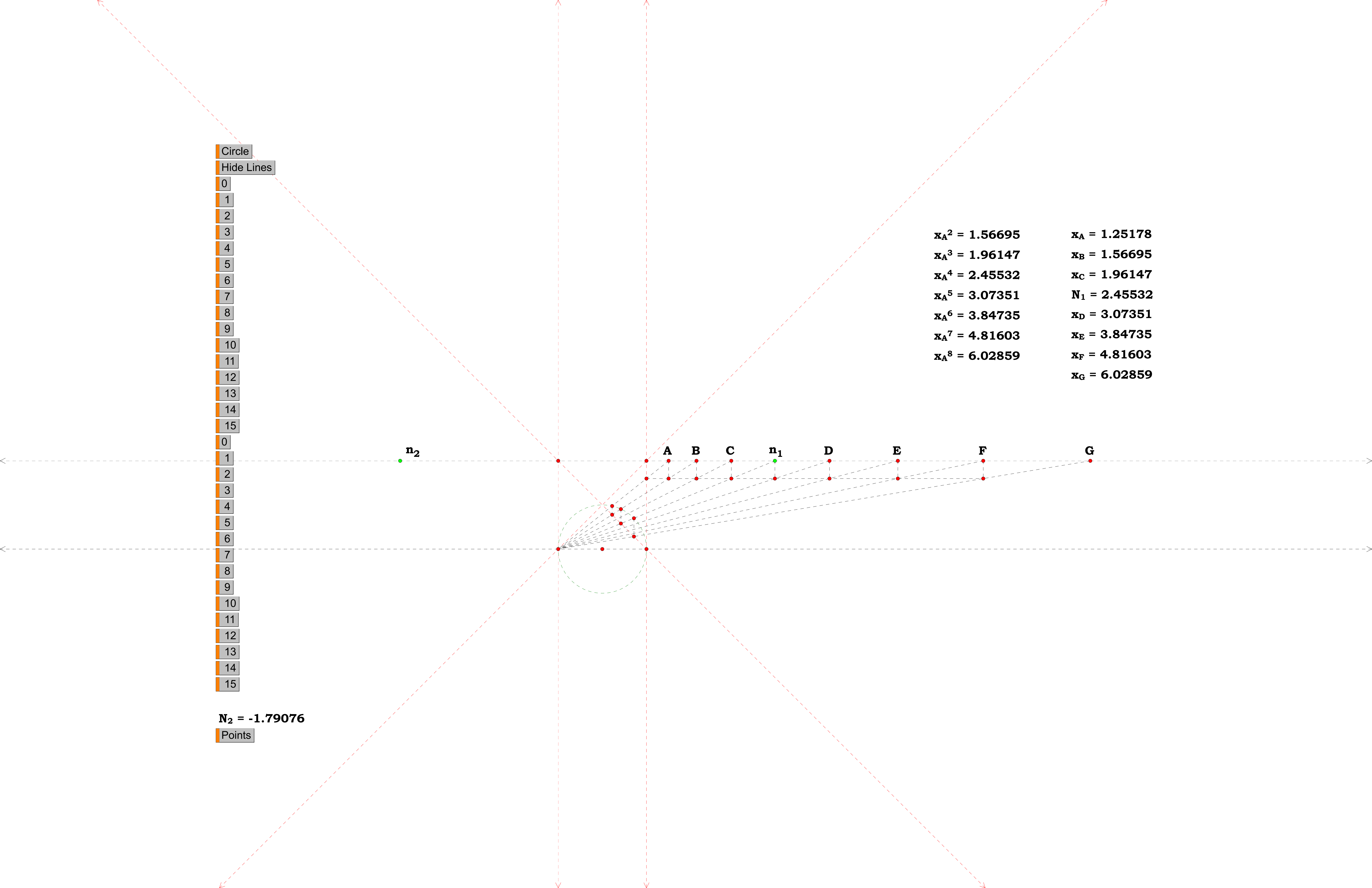
$x_A{}^3 = 3.56305$

$x_C = 1.23586$

$x_D = 1.88761$

$x_E = 2.88305$

$N_2 = -4.39864$



$x_A^2 = 1.56695$

$x_A^3 = 1.96147$

$x_A^4 = 2.45532$

$x_A^5 = 3.07351$

$x_A^6 = 3.84735$

$x_A^7 = 4.81603$

$x_A^8 = 6.02859$

$x_A = 1.25178$

$x_B = 1.56695$

$x_C = 1.96147$

$N_1 = 2.45532$

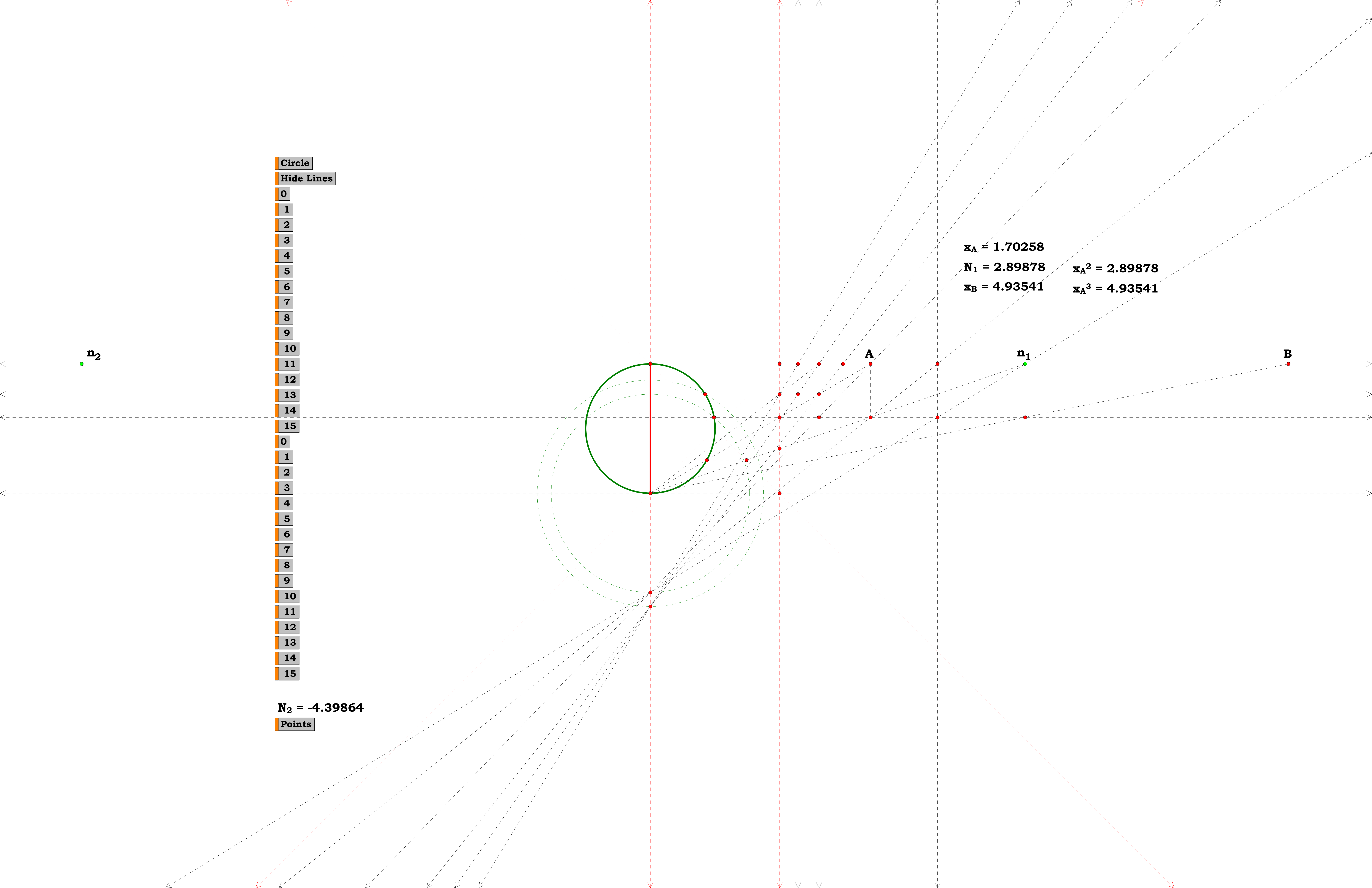
$x_D = 3.07351$

$x_E = 3.84735$

$x_F = 4.81603$

$x_G = 6.02859$

$N_2 = -1.79076$



$x_A = 1.70258$

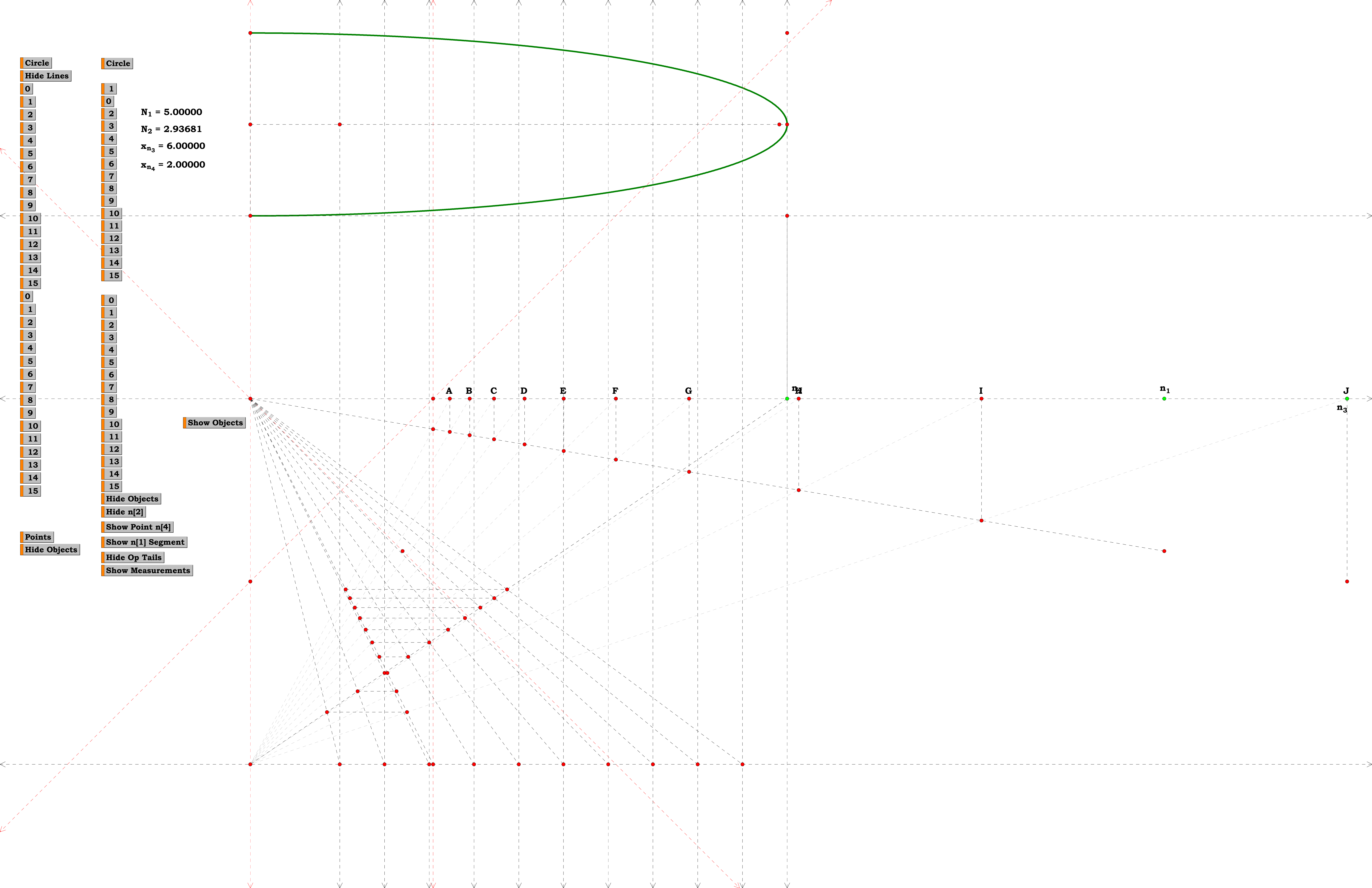
$N_1 = 2.89878$

$x_B = 4.93541$

$x_A^2 = 2.89878$

$x_A^3 = 4.93541$

$N_2 = -4.39864$

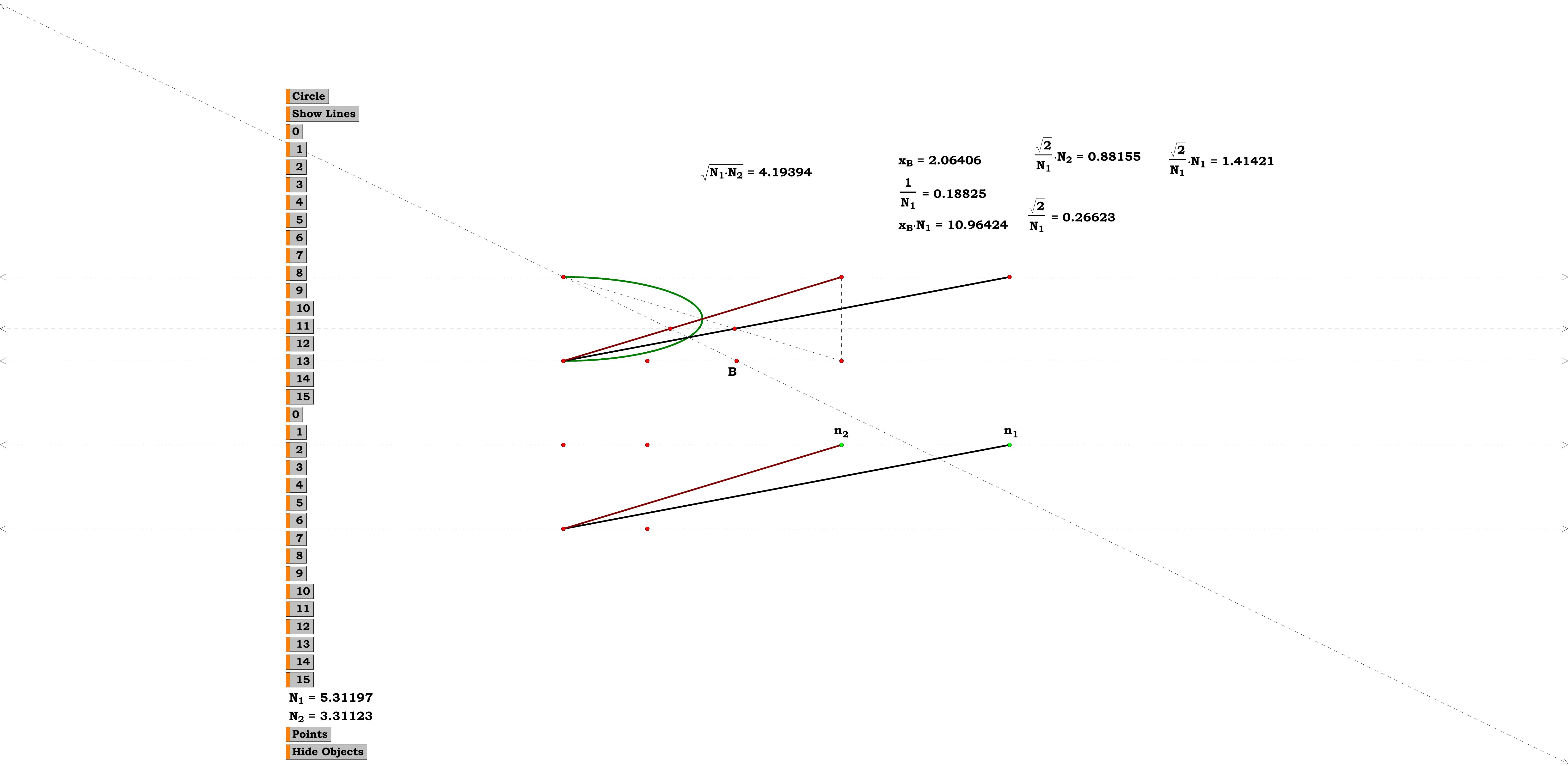


$N_1 = 5.00000$

$N_2 = 2.93681$

$x_{n_3} = 6.00000$

$x_{n_4} = 2.00000$



$\sqrt{N_1 \cdot N_2} = 4.19394$

$x_B = 2.06406$

$\frac{1}{N_1} = 0.18825$

$x_B \cdot N_1 = 10.96424$

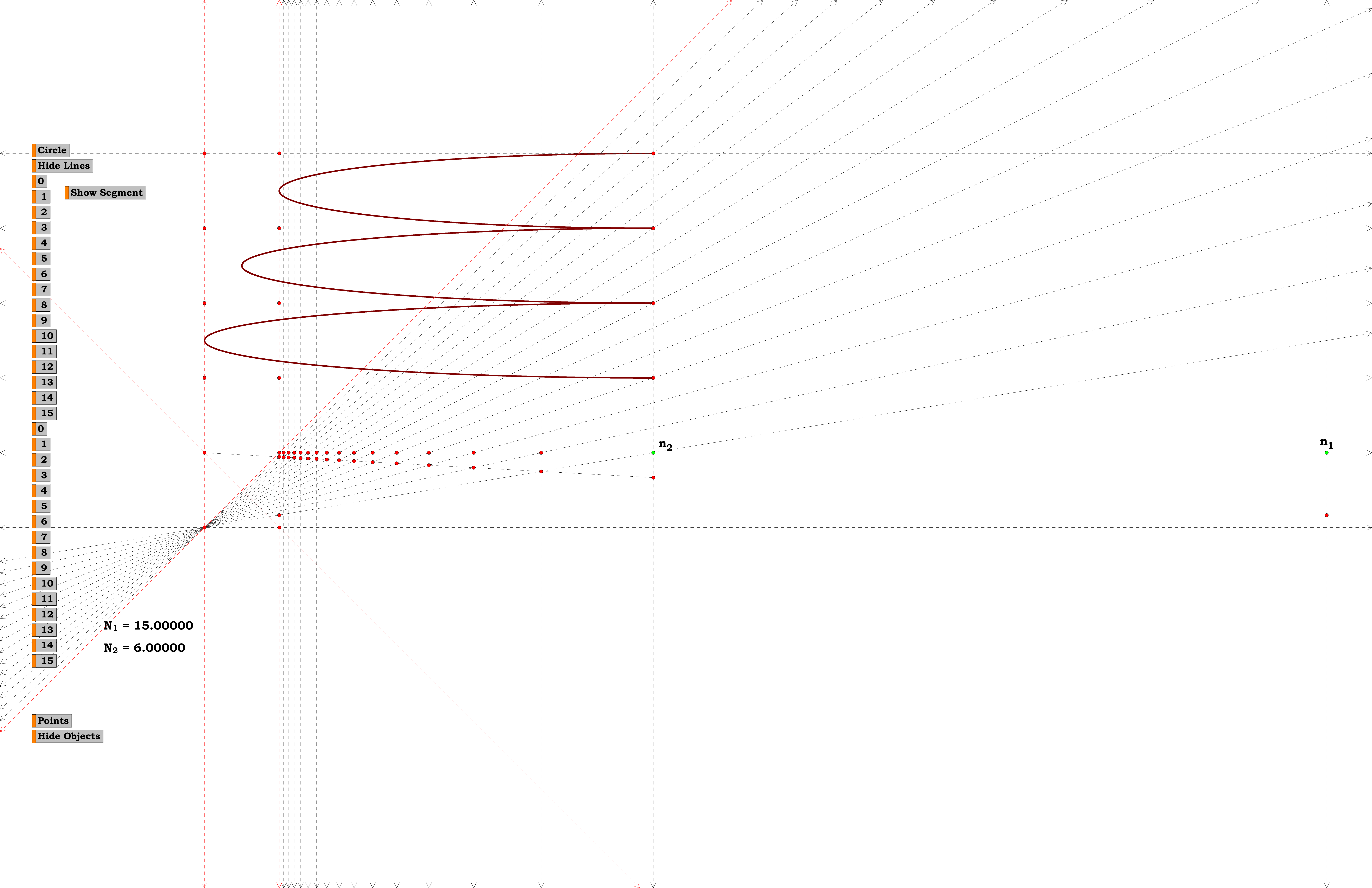
$\frac{\sqrt{2}}{N_1} \cdot N_2 = 0.88155$

$\frac{\sqrt{2}}{N_1} = 0.26623$

$\frac{\sqrt{2}}{N_1} \cdot N_1 = 1.41421$

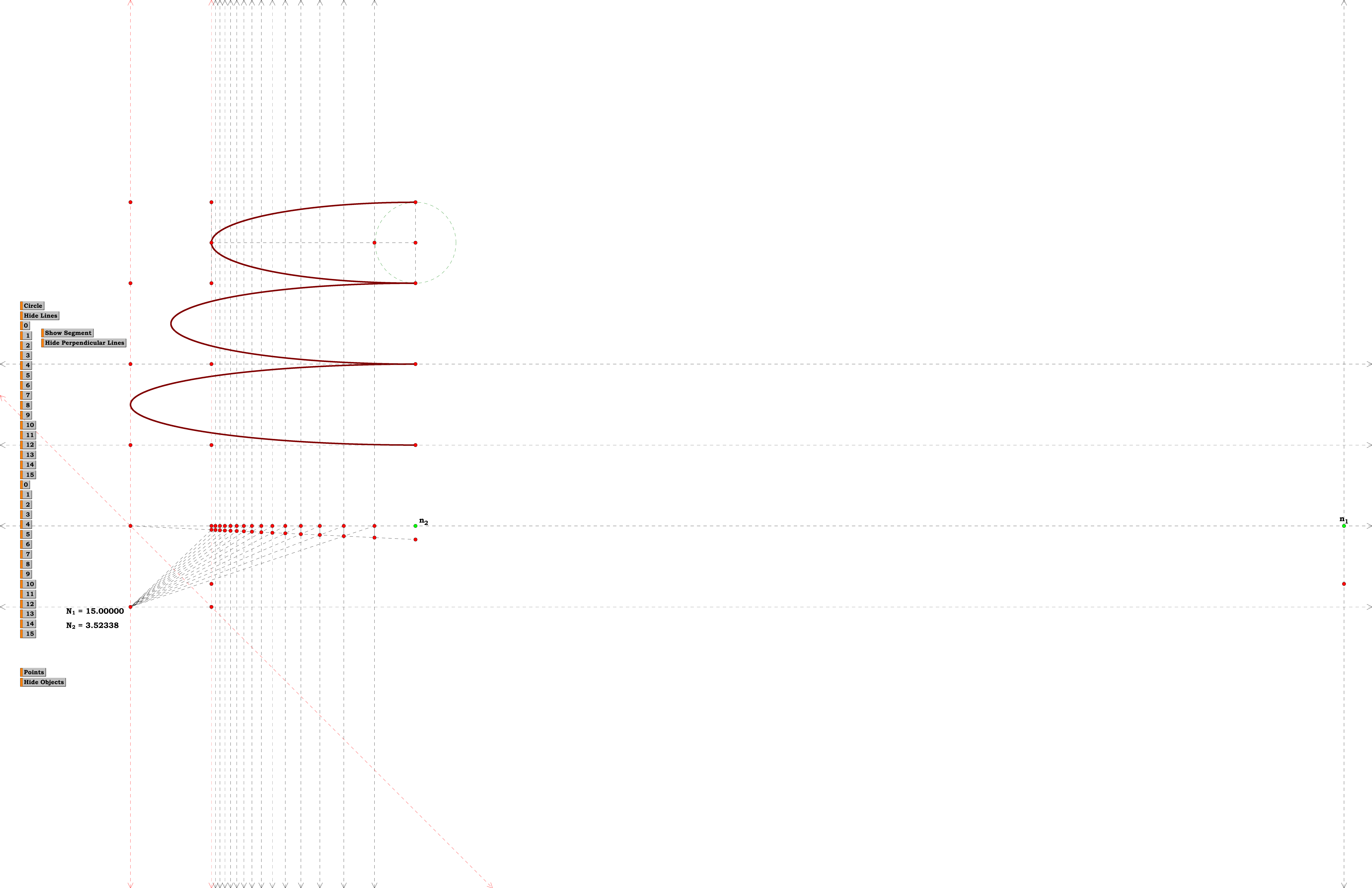
$N_1 = 5.31197$

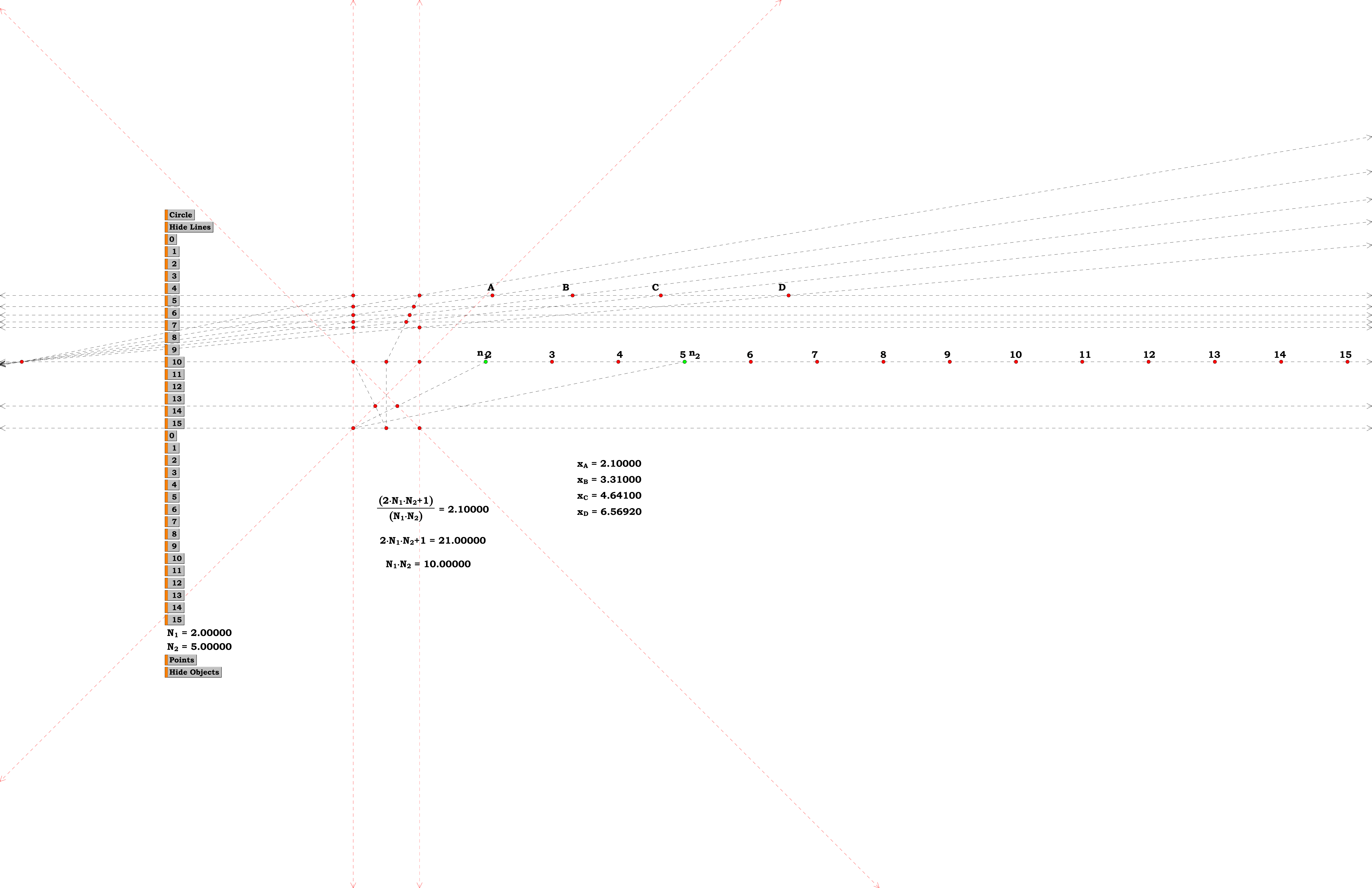
$N_2 = 3.31123$



$N_1 = 15.00000$

$N_2 = 6.00000$


Circle
Hide Lines
Show Segment
Hide Perpendicular Lines
n_2
n_1
$N_1 = 15.00000$
$N_2 = 3.52338$
Points
Hide Objects



$N_1 = 2.00000$

$N_2 = 5.00000$

$\frac{(2 \cdot N_1 \cdot N_2+1)}{(N_1 \cdot N_2)} = 2.10000$

$2 \cdot N_1 \cdot N_2+1 = 21.00000$

$N_1 \cdot N_2 = 10.00000$

$x_A = 2.10000$

$x_B = 3.31000$

$x_C = 4.64100$

$x_D = 6.56920$

Index is Base 0

Indexs: $I_{ndx} = 1$ $C_{indx} = 13.00000$

Number of div. by difference at an index.

$$\frac{(I_{ndx}\cdot N_2 - N_1\cdot N_3)\cdot((I_{ndx}\cdot N_2+N_2)-N_1\cdot N_3)}{N_1\cdot N_2} = 105.00000$$

Total number of fractions.

$$\frac{N_1\cdot(N_3-1)}{N_2} = 14.00000 \qquad \frac{N_1\cdot N_3-N_1}{N_2} = 14.00000$$

Fraction at Index:

Num: $N_1\cdot N_3-I_{ndx}\cdot N_2 = 30.00000$

Den: $N_1 = 4.00000$

$$\frac{(N_1\cdot N_3-I_{ndx}\cdot N_2)}{N_1} = 7.50000$$

Fraction at Compliment:

$$\frac{N_1+N_2\cdot I_{ndx}}{N_1} = 1.50000$$

$$\frac{(N_1\cdot N_3-I_{ndx}\cdot N_2)}{N_1}+\frac{N_1+N_2\cdot I_{ndx}}{N_1} = 9.00000$$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

$N_1 = 4.00000$
$N_2 = 2.00000$
$N_3 = 8.00000$

Present 2 Actions

$$\frac{N_3}{N_3+1} = 0.88889$$

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

$$\frac{N_1\cdot N_3-N_1-I_{ndx}\cdot N_2}{N_2} = 13.00000$$

$\frac{N_3}{1} = 8.00000$ $\frac{N_3}{H} = 4.00000$

$\frac{N_3}{A} = 7.50000$ $\frac{N_3}{I} = 3.50000$

$\frac{N_3}{B} = 7.00000$ $\frac{N_3}{J} = 3.00000$

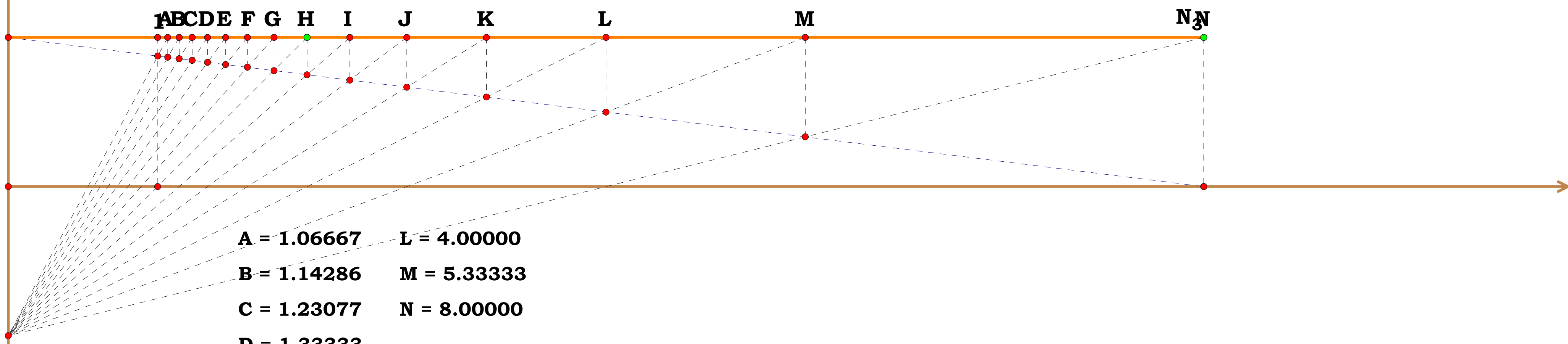
$\frac{N_3}{C} = 6.50000$ $\frac{N_3}{K} = 2.50000$

$\frac{N_3}{D} = 6.00000$ $\frac{N_3}{L} = 2.00000$

$\frac{N_3}{E} = 5.50000$ $\frac{N_3}{M} = 1.50000$

$\frac{N_3}{F} = 5.00000$ $\frac{N_3}{N} = 1.00000$

$\frac{N_3}{G} = 4.50000$



A = 1.06667
B = 1.14286
C = 1.23077
D = 1.33333
E = 1.45455
F = 1.60000
G = 1.77778
H = 2.00000
I = 2.28571
J = 2.66667
K = 3.20000

L = 4.00000
M = 5.33333
N = 8.00000

Indexs:

Index = 0 C_{indx} = 8.00

Number of div. by difference at an index.

$$\frac{(\text{Index}\cdot(1-N_3)+N_1\cdot N_2\cdot N_3)\cdot((N_3+\text{Index}\cdot(1-N_3)+N_1\cdot N_2\cdot N_3)-1)}{N_1\cdot N_2\cdot(N_3-1)} = 81.14286$$

len of frac. $\frac{N_1\cdot N_2\cdot N_3}{N_1\cdot N_2\cdot N_3-\text{Index}\cdot(N_3-1)} = 1.00000$

Total number of fractions.

$N_1\cdot N_2 = 8.00000$

Fraction at Index:

Num: $N_1\cdot N_2\cdot N_3-\text{Index}\cdot(N_3-1) = 64.00000$

Den: $N_1\cdot N_2 = 8.00000$

$$\frac{(N_1\cdot N_2\cdot N_3-\text{Index}\cdot(N_3-1))}{(N_1\cdot N_2)} = 8.00000$$

Fraction at Compliment:

$$\frac{N_1\cdot N_2\cdot N_3-C_{indx}\cdot(N_3-1)}{N_1\cdot N_2} = 1.00000$$

$$\frac{(N_3-C_{indx}\cdot N_3-\text{Index}\cdot N_3)+2\cdot N_1\cdot N_2\cdot N_3}{N_1\cdot N_2} = 9.00000$$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

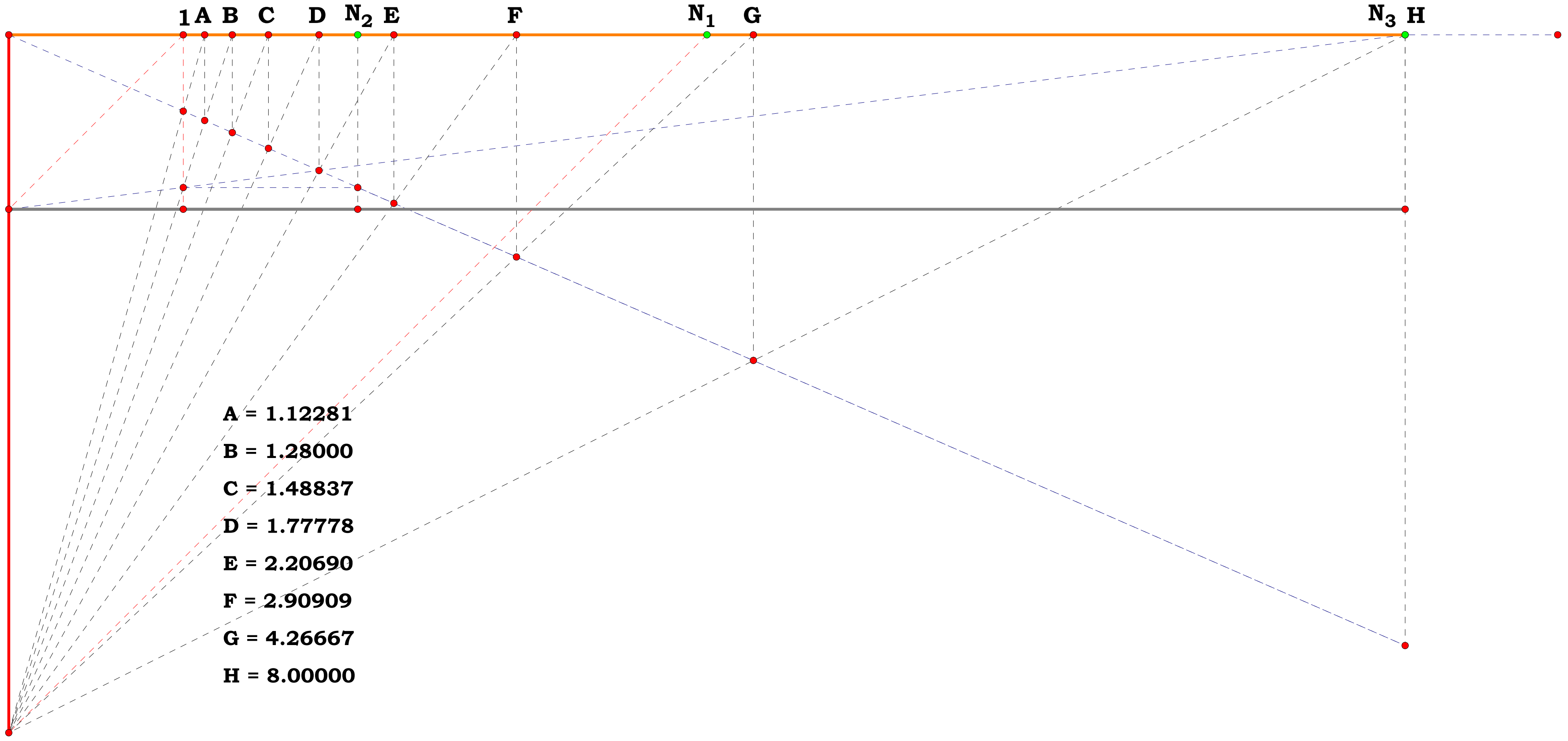
N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

N_1 = 4.00000
N_2 = 2.00000
N_3 = 8.00000

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

$\frac{N_3}{1} = 8.00000$
$\frac{N_3}{A} = 7.12500$
$\frac{N_3}{B} = 6.25000$
$\frac{N_3}{C} = 5.37500$
$\frac{N_3}{D} = 4.50000$

$\frac{N_3}{E} = 3.62500$
$\frac{N_3}{F} = 2.75000$
$\frac{N_3}{G} = 1.87500$
$\frac{N_3}{H} = 1.00000$



A = 1.12281
B = 1.28000
C = 1.48837
D = 1.77778
E = 2.20690
F = 2.90909
G = 4.26667
H = 8.00000

$i_{dx} = 1$

$$\frac{(i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3)\cdot(((N_2-i_{dx}\cdot N_2-N_0\cdot N_2)+i_{dx}\cdot N_0\cdot N_2)-N_0\cdot N_1\cdot N_3)}{N_1\cdot N_3\cdot(((N_2+i_{dx}\cdot(N_2-N_0\cdot N_2))-i_{dx}\cdot N_2-N_0\cdot N_2)+i_{dx}\cdot N_0\cdot N_2)} = 60.00000$$

$$\frac{N_0\cdot N_1\cdot N_3}{i_{dx}\cdot(N_2-N_2\cdot N_0)+N_0\cdot N_1\cdot N_3} = 1.06667$$

$$\frac{N_1\cdot N_3-i_{dx}\cdot N_2\cdot(1-N_0)}{N_1\cdot N_3} = 1.25000$$

$$\frac{(i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3)}{(N_1\cdot N_3)}+\frac{N_1\cdot N_3-i_{dx}\cdot N_2\cdot(1-N_0)}{N_1\cdot N_3} = 5.00000$$

Total number of fractions.

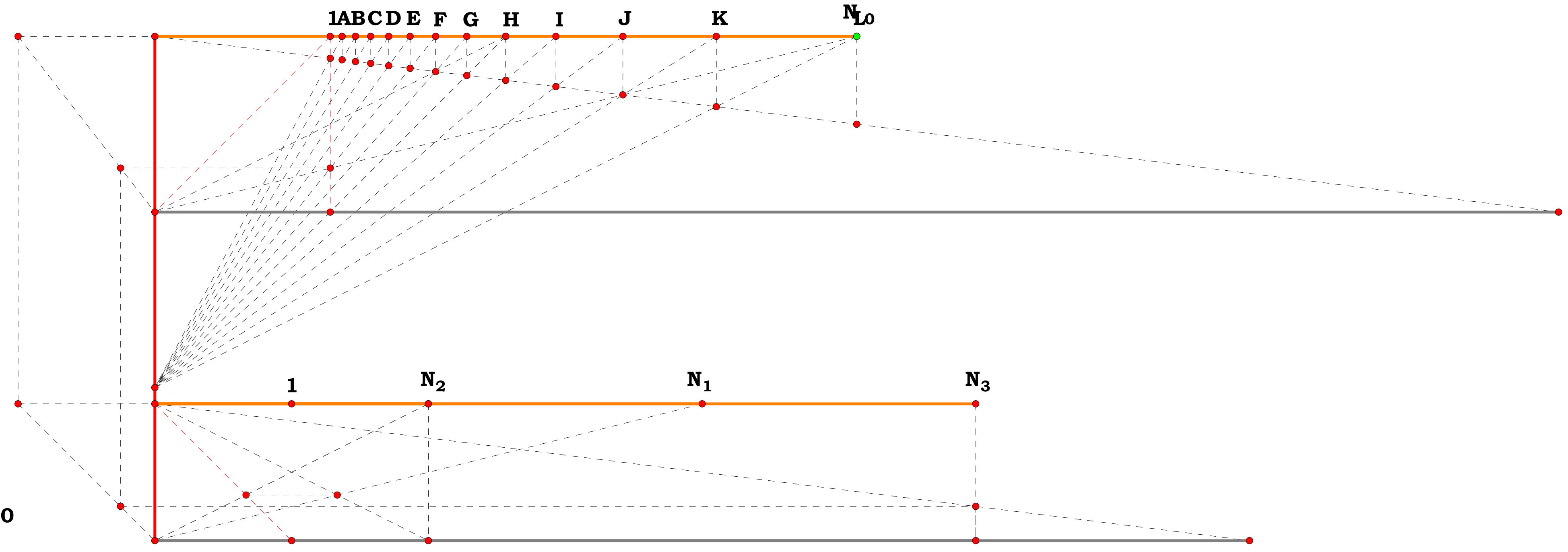
$$\frac{N_1\cdot N_3}{N_2} = 12.00000$$

Fraction at Index:

Num: $i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3 = 90.00000$

Den: $N_1\cdot N_3 = 24.00000$

$$\frac{(i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3)}{(N_1\cdot N_3)} = 3.75000$$



$N_0 = 4.00000$

$N_1 = 4.00000$

$N_2 = 2.00000$

$N_3 = 6.00000$

$N_1\cdot N_3 = 24.00000$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

N [0] -> 0
N [0] -> 1
N [0] -> 2
N [0] -> 3
N [0] -> 4
N [0] -> 5
N [0] -> 6
N [0] -> 7
N [0] -> 8
N [0] -> 9
N [0]-> 10
N [0] -> 11

A = 1.06667
B = 1.14286
C = 1.23077
D = 1.33333
E = 1.45455
F = 1.60000
G = 1.77778
H = 2.00000
I = 2.28571
J = 2.66667
K = 3.20000
L = 4.00000

$\frac{N_0}{A} = 3.75000$

$\frac{N_0}{B} = 3.50000$

$\frac{N_0}{C} = 3.25000$

$\frac{N_0}{D} = 3.00000$

$\frac{N_0}{E} = 2.75000$

$\frac{N_0}{F} = 2.50000$

$\frac{N_0}{G} = 2.25000$

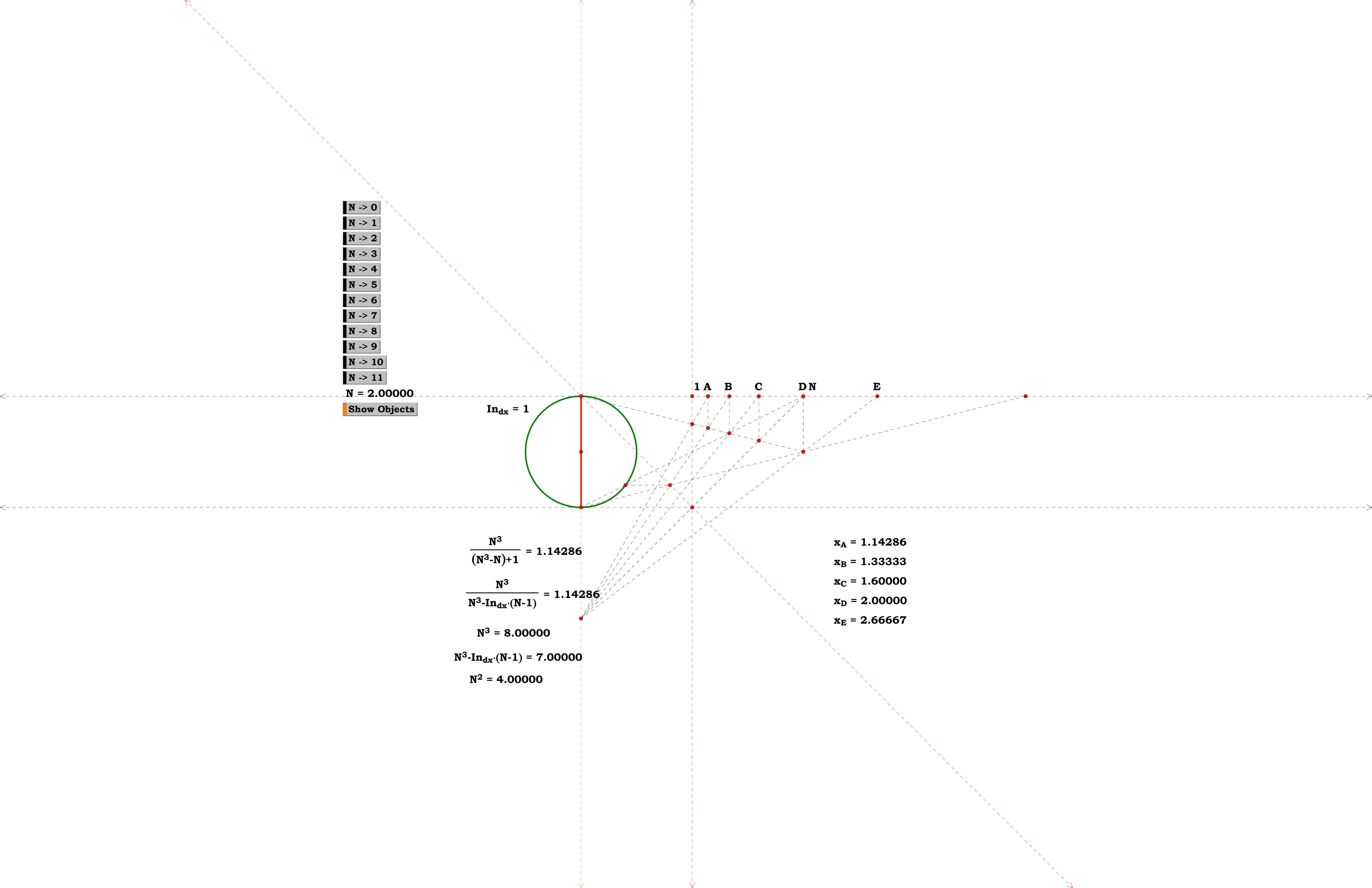
$\frac{N_0}{H} = 2.00000$

$\frac{N_0}{I} = 1.75000$

$\frac{N_0}{J} = 1.50000$

$\frac{N_0}{K} = 1.25000$

$\frac{N_0}{L} = 1.00000$



N -> 0

N -> 1

N -> 2

N -> 3

N -> 4

N -> 5

N -> 6

N -> 7

N -> 8

N -> 9

N -> 10

N -> 11

$N = 2.00000$

Show Objects

$In_{dx} = 1$

$$\frac{N^3}{(N^3-N)+1} = 1.14286$$

$$\frac{N^3}{N^3-In_{dx}\cdot(N-1)} = 1.14286$$

$N^3 = 8.00000$

$N^3-In_{dx}\cdot(N-1) = 7.00000$

$N^2 = 4.00000$

$x_A = 1.14286$

$x_B = 1.33333$

$x_C = 1.60000$

$x_D = 2.00000$

$x_E = 2.66667$

Circle Points Circle Points Circle Points

Show Lines Hide Objects Show Lines Hide Objects Show Lines Hide Objects

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14
15	15	15	15	15	15

$N_1 = 5.00000$

$N_2 = 0.00000$

$n_a = 7.00000$

$n_b = 5.00000$

$r_{da} = 1.40000$

$\frac{n_a}{n_b} = 1.40000$

$N_1 \cdot \frac{n_a}{n_b} = 7.00000$

$n_c = 3.00000$

$n_d = 4.00000$

$r_{db} = 0.75000$

$\frac{n_c}{n_d} = 0.75000$

$\frac{n_c}{n_d} \cdot N_1 = 3.75000$

$In_{dx} = 0$

$\frac{26.25000}{26.25000} = 1.00000$

$B_3 = 6.17647$

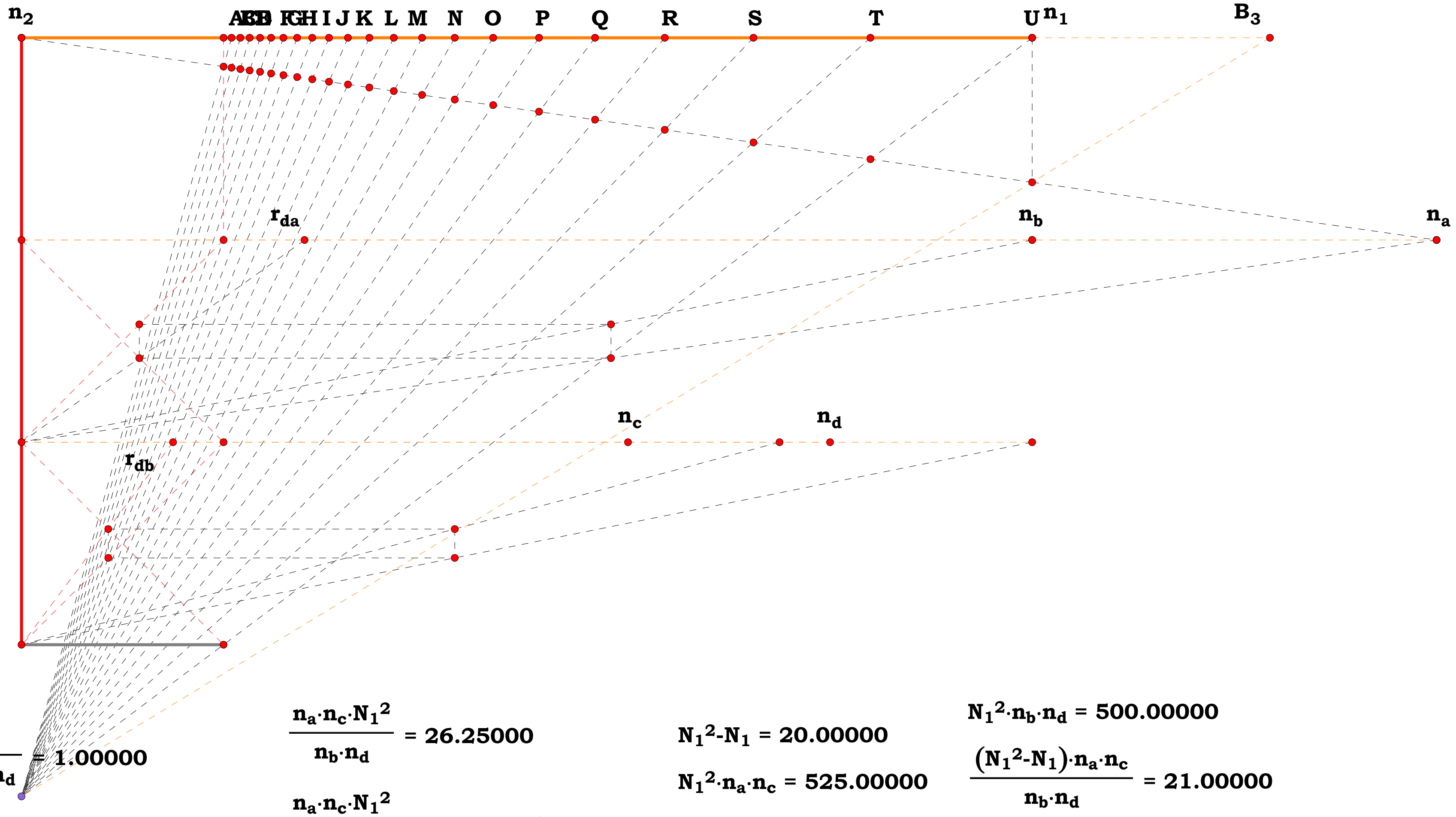
$\frac{N_1}{B_3 - N_1} + 1 = 5.25000$

$\frac{7}{3.75} = 1.86667$

A = 1.03960
B = 1.08247
C = 1.12903
D = 1.17978
E = 1.23529
F = 1.29630
G = 1.36364
H = 1.43836
I = 1.52174

J = 1.61538
K = 1.72131
L = 1.84211
M = 1.98113
N = 2.14286
O = 2.33333
P = 2.56098
Q = 2.83784
R = 3.18182

S = 3.62069
T = 4.20000
U = 5.00000



$\frac{N_1^2 \cdot n_a \cdot n_c}{N_1^2 \cdot n_a \cdot n_c - In_{dx} \cdot n_b \cdot n_d} = 1.00000$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} = 26.25000$

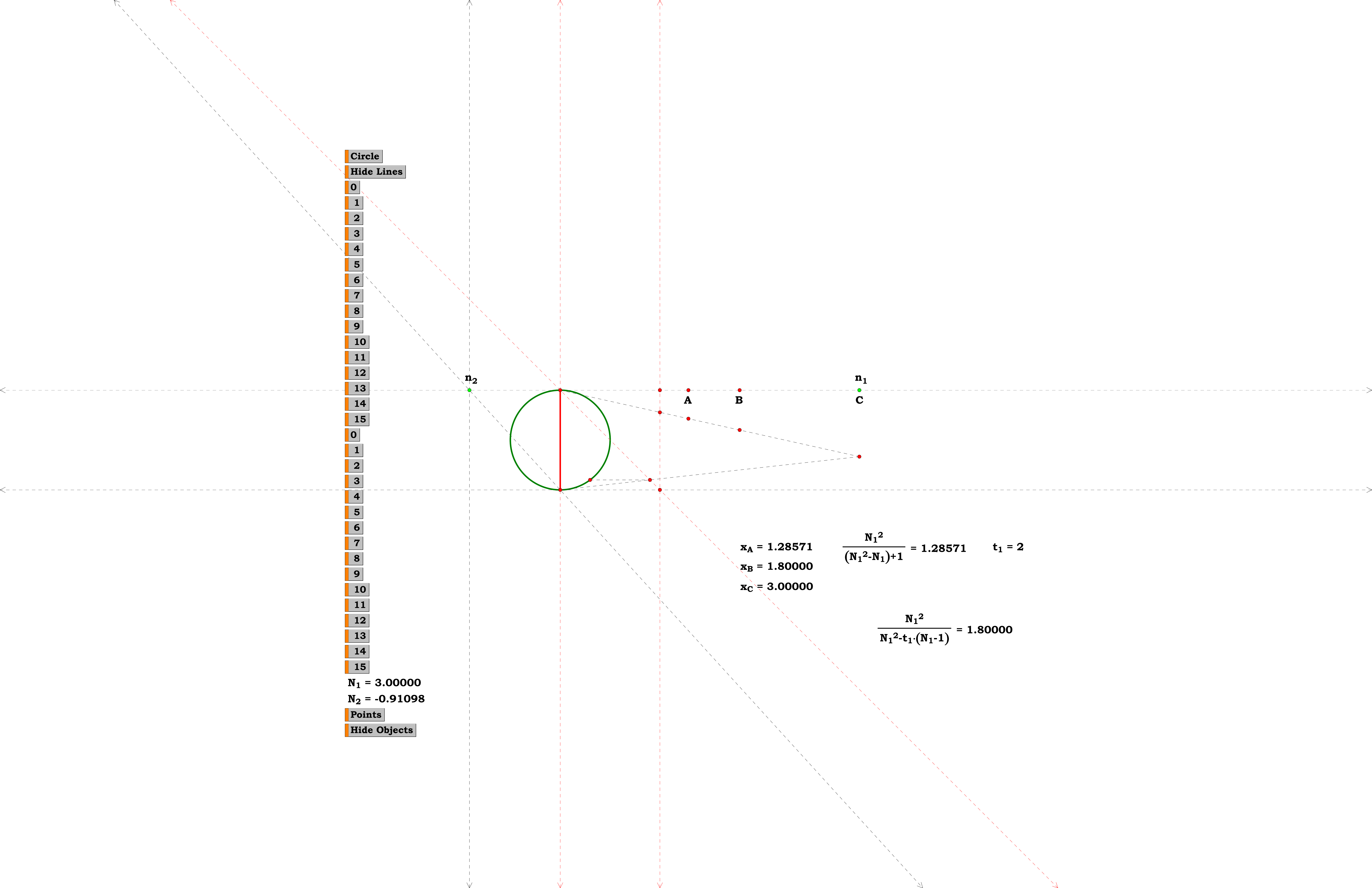
$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} - In_{dx} = 26.25000$

$N_1^2 - N_1 = 20.00000$

$N_1^2 \cdot n_a \cdot n_c = 525.00000$

$N_1^2 \cdot n_b \cdot n_d = 500.00000$

$\frac{(N_1^2 - N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d} = 21.00000$



$N_1 = 3.00000$

$N_2 = -0.91098$

$x_A = 1.28571$

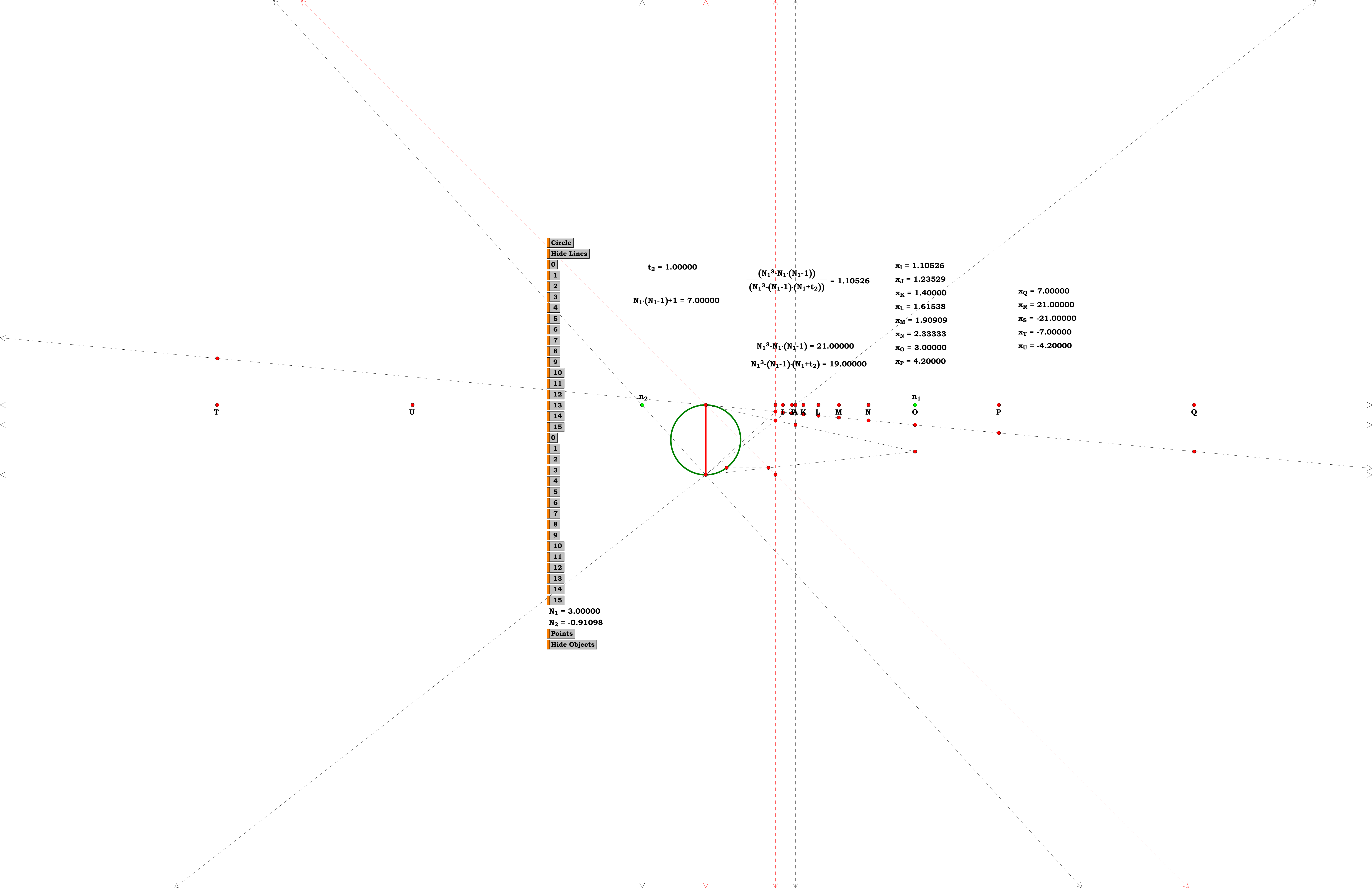
$x_B = 1.80000$

$x_C = 3.00000$

$$\frac{N_1^2}{(N_1^2-N_1)+1} = 1.28571$$

$t_1 = 2$

$$\frac{N_1^2}{N_1^2-t_1\cdot(N_1-1)} = 1.80000$$



$t_2 = 1.00000$

$N_1 \cdot (N_1 - 1) + 1 = 7.00000$

$\frac{(N_1^3 - N_1 \cdot (N_1 - 1))}{(N_1^3 - (N_1 - 1) \cdot (N_1 + t_2))} = 1.10526$

$N_1^3 - N_1 \cdot (N_1 - 1) = 21.00000$

$N_1^3 - (N_1 - 1) \cdot (N_1 + t_2) = 19.00000$

$x_I = 1.10526$
$x_J = 1.23529$
$x_K = 1.40000$
$x_L = 1.61538$
$x_M = 1.90909$
$x_N = 2.33333$
$x_O = 3.00000$
$x_P = 4.20000$

$x_Q = 7.00000$
$x_R = 21.00000$
$x_S = -21.00000$
$x_T = -7.00000$
$x_U = -4.20000$

$N_1 = 3.00000$
$N_2 = -0.91098$

Index is Base 0

Indexs: $I_{ndx} = 1$ $C_{indx} = 13.00000$

Number of div. by difference at an index.

$$\frac{(I_{ndx} \cdot N_2 - N_1 \cdot N_3) \cdot ((I_{ndx} \cdot N_2 + N_2) - N_1 \cdot N_3)}{N_1 \cdot N_2} = 105.00000$$

Total number of fractions.

$$\frac{N_1 \cdot (N_3 - 1)}{N_2} = 14.00000 \qquad \frac{N_1 \cdot N_3 - N_1}{N_2} = 14.00000$$

Fraction at Index:

Num: $N_1 \cdot N_3 - I_{ndx} \cdot N_2 = 30.00000$

Den: $N_1 = 4.00000$

$$\frac{(N_1 \cdot N_3 - I_{ndx} \cdot N_2)}{N_1} = 7.50000$$

Fraction at Compliment:

$$\frac{N_1 + N_2 \cdot I_{ndx}}{N_1} = 1.50000$$

$$\frac{(N_1 \cdot N_3 - I_{ndx} \cdot N_2)}{N_1} + \frac{N_1 + N_2 \cdot I_{ndx}}{N_1} = 9.00000$$

N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

$N_1 = 4.00000$
$N_2 = 2.00000$
$N_3 = 8.00000$

Present 2 Actions

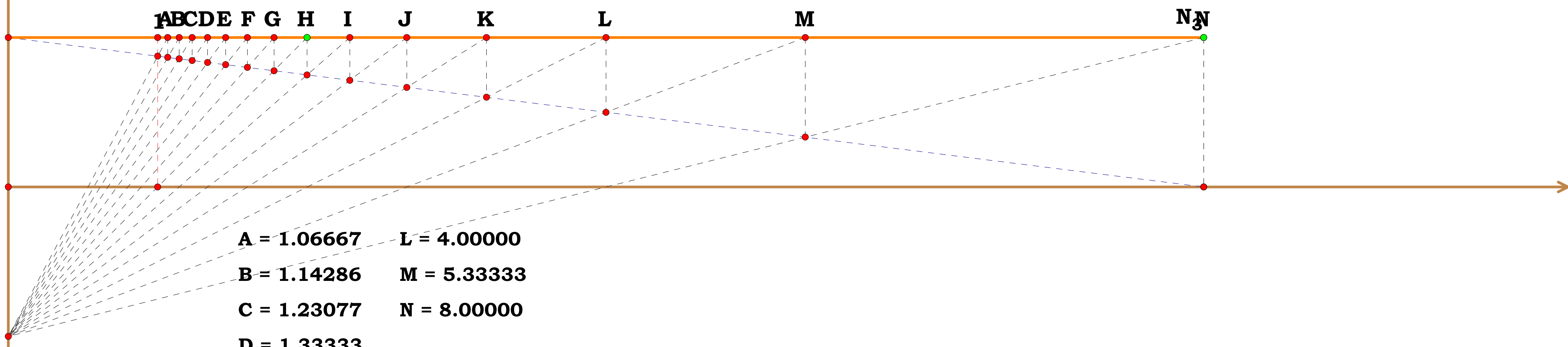
$$\frac{N_3}{N_3 + 1} = 0.88889$$

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

$$\frac{N_1 \cdot N_3 - N_1 - I_{ndx} \cdot N_2}{N_2} = 13.00000$$

$\frac{N_3}{1} = 8.00000$
$\frac{N_3}{A} = 7.50000$
$\frac{N_3}{B} = 7.00000$
$\frac{N_3}{C} = 6.50000$
$\frac{N_3}{D} = 6.00000$
$\frac{N_3}{E} = 5.50000$
$\frac{N_3}{F} = 5.00000$
$\frac{N_3}{G} = 4.50000$

$\frac{N_3}{H} = 4.00000$
$\frac{N_3}{I} = 3.50000$
$\frac{N_3}{J} = 3.00000$
$\frac{N_3}{K} = 2.50000$
$\frac{N_3}{L} = 2.00000$
$\frac{N_3}{M} = 1.50000$
$\frac{N_3}{N} = 1.00000$



A = 1.06667
B = 1.14286
C = 1.23077
D = 1.33333
E = 1.45455
F = 1.60000
G = 1.77778
H = 2.00000
I = 2.28571
J = 2.66667
K = 3.20000

L = 4.00000
M = 5.33333
N = 8.00000

Indexs:

Index = 0 $C_{indx} = 8.00$

Number of div. by difference at an index.

$$\frac{(Index\cdot(1-N_3)+N_1\cdot N_2\cdot N_3)\cdot((N_3+Index\cdot(1-N_3)+N_1\cdot N_2\cdot N_3)-1)}{N_1\cdot N_2\cdot(N_3-1)} = 81.14286$$

len of frac. $\frac{N_1\cdot N_2\cdot N_3}{N_1\cdot N_2\cdot N_3-Index\cdot(N_3-1)} = 1.00000$

Total number of fractions.

$N_1\cdot N_2 = 8.00000$

Fraction at Index:

Num: $N_1\cdot N_2\cdot N_3-Index\cdot(N_3-1) = 64.00000$

Den: $N_1\cdot N_2 = 8.00000$

$$\frac{(N_1\cdot N_2\cdot N_3-Index\cdot(N_3-1))}{(N_1\cdot N_2)} = 8.00000$$

Fraction at Compliment:

$$\frac{N_1\cdot N_2\cdot N_3-C_{indx}\cdot(N_3-1)}{N_1\cdot N_2} = 1.00000$$

$$\frac{(N_3-C_{indx}\cdot N_3-Index\cdot N_3)+2\cdot N_1\cdot N_2\cdot N_3}{N_1\cdot N_2} = 9.00000$$

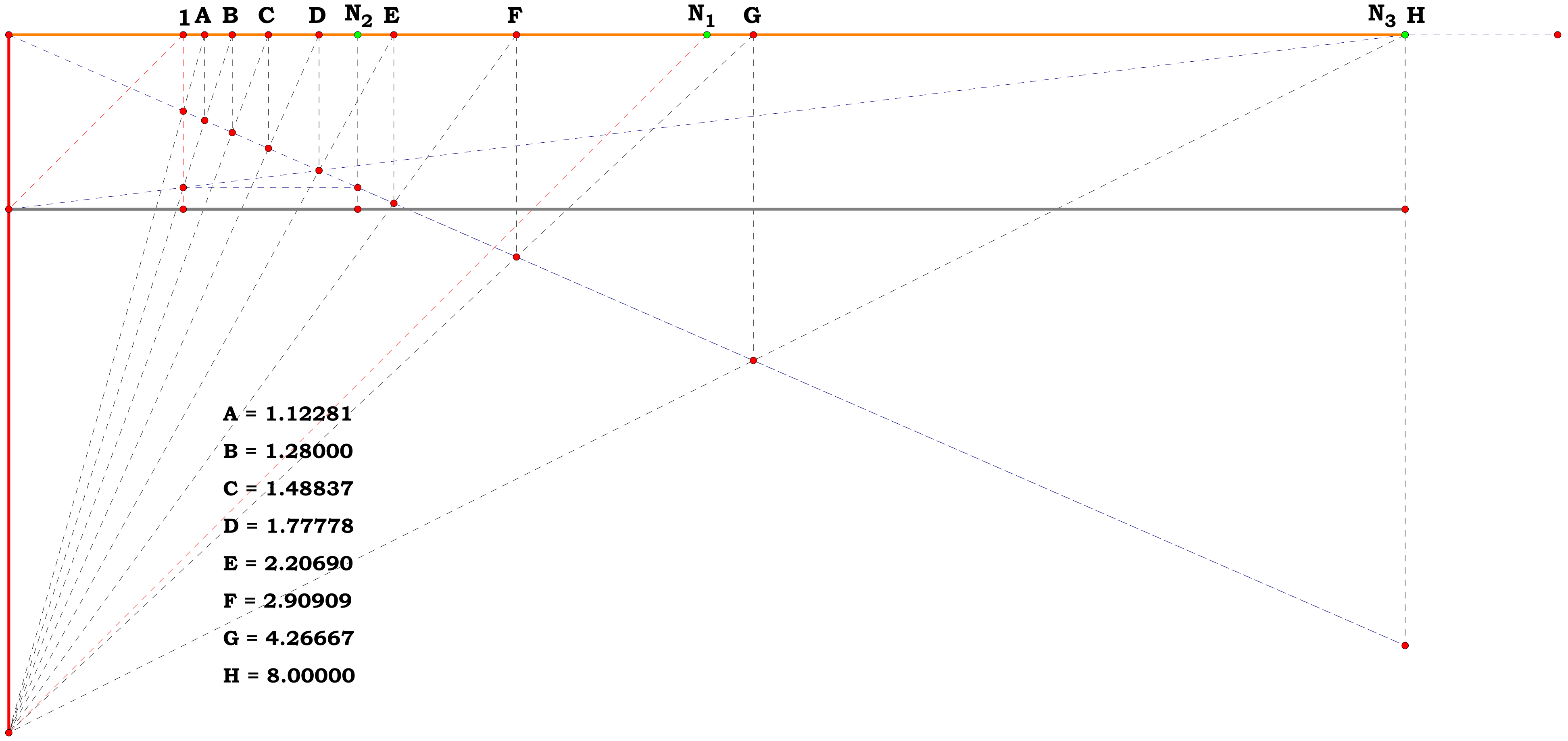
N[1] -> 0
N[1] -> 1
N[1] -> 2
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11

N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11

$N_1 = 4.00000$
$N_2 = 2.00000$
$N_3 = 8.00000$

N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11

$\frac{N_3}{1} = 8.00000$
$\frac{N_3}{A} = 7.12500$
$\frac{N_3}{B} = 6.25000$
$\frac{N_3}{C} = 5.37500$
$\frac{N_3}{D} = 4.50000$
$\frac{N_3}{E} = 3.62500$
$\frac{N_3}{F} = 2.75000$
$\frac{N_3}{G} = 1.87500$
$\frac{N_3}{H} = 1.00000$



A = 1.12281
B = 1.28000
C = 1.48837
D = 1.77778
E = 2.20690
F = 2.90909
G = 4.26667
H = 8.00000

$i_{dx} = 1$

$$\frac{(i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3)\cdot(((N_2-i_{dx}\cdot N_2-N_0\cdot N_2)+i_{dx}\cdot N_0\cdot N_2)-N_0\cdot N_1\cdot N_3)}{N_1\cdot N_3\cdot(((N_2+i_{dx}\cdot(N_2-N_0\cdot N_2))-i_{dx}\cdot N_2-N_0\cdot N_2)+i_{dx}\cdot N_0\cdot N_2)} = 60.00000$$

$$\frac{N_0\cdot N_1\cdot N_3}{i_{dx}\cdot(N_2-N_2\cdot N_0)+N_0\cdot N_1\cdot N_3} = 1.06667$$

$$\frac{N_1\cdot N_3-i_{dx}\cdot N_2\cdot(1-N_0)}{N_1\cdot N_3} = 1.25000$$

$$\frac{(i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3)}{(N_1\cdot N_3)}+\frac{N_1\cdot N_3-i_{dx}\cdot N_2\cdot(1-N_0)}{N_1\cdot N_3} = 5.00000$$

Total number of fractions.

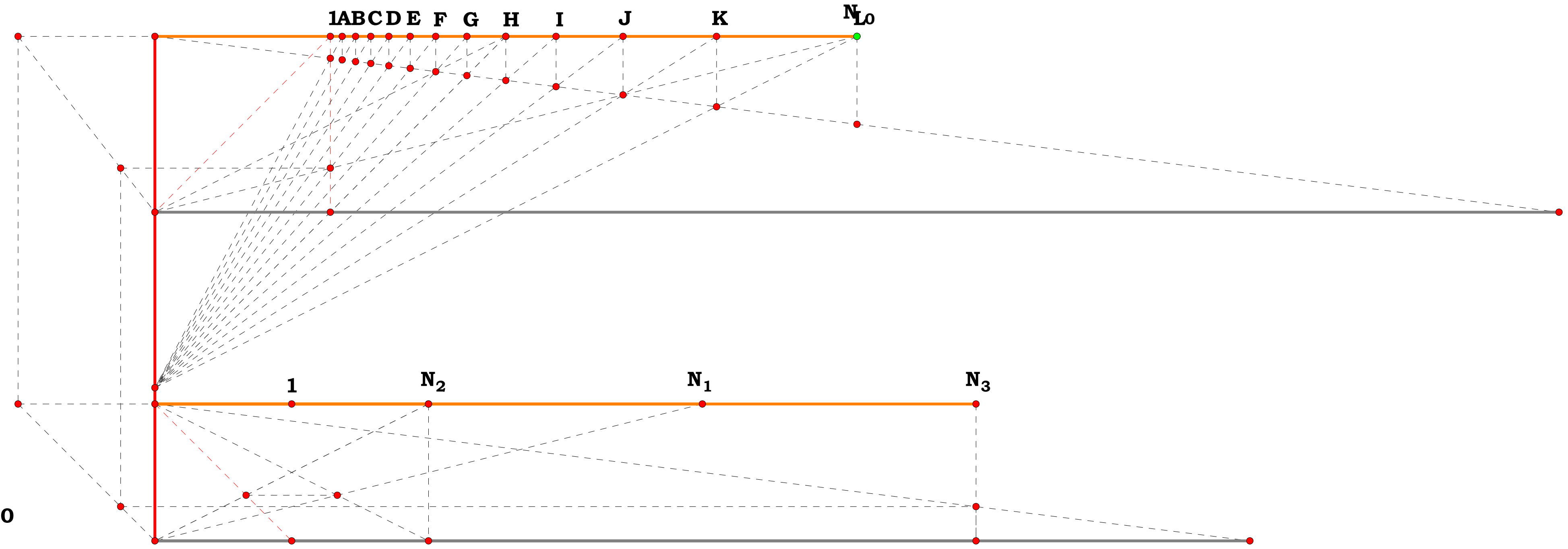
$$\frac{N_1\cdot N_3}{N_2} = 12.00000$$

Fraction at Index:

Num: $i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3 = 90.00000$

Den: $N_1\cdot N_3 = 24.00000$

$$\frac{(i_{dx}\cdot(N_2-N_0\cdot N_2)+N_0\cdot N_1\cdot N_3)}{(N_1\cdot N_3)} = 3.75000$$



$N_0 = 4.00000$

$N_1 = 4.00000$

$N_2 = 2.00000$

$N_3 = 6.00000$

$N_1\cdot N_3 = 24.00000$

N[1] -> 0	N[2] -> 0	N[3] -> 0	N [0] -> 0
N[1] -> 1	N[2] -> 1	N[3] -> 1	N [0] -> 1
N[1] -> 2	N[2] -> 2	N[3] -> 2	N [0] -> 2
N[1] -> 3	N[2] -> 3	N[3] -> 3	N [0] -> 3
N[1] -> 4	N[2] -> 4	N[3] -> 4	N [0] -> 4
N[1] -> 5	N[2] -> 5	N[3] -> 5	N [0] -> 5
N[1] -> 6	N[2] -> 6	N[3] -> 6	N [0] -> 6
N[1] -> 7	N[2] -> 7	N[3] -> 7	N [0] -> 7
N[1] -> 8	N[2] -> 8	N[3] -> 8	N [0] -> 8
N[1] -> 9	N[2] -> 9	N[3] -> 9	N [0] -> 9
N[1] -> 10	N[2] -> 10	N[3] -> 10	N [0]-> 10
N[1] -> 11	N[2] -> 11	N[3] -> 11	N [0] -> 11

A = 1.06667
B = 1.14286
C = 1.23077
D = 1.33333
E = 1.45455
F = 1.60000
G = 1.77778
H = 2.00000
I = 2.28571
J = 2.66667
K = 3.20000
L = 4.00000

$\frac{N_0}{A} = 3.75000$

$\frac{N_0}{B} = 3.50000$

$\frac{N_0}{C} = 3.25000$

$\frac{N_0}{D} = 3.00000$

$\frac{N_0}{E} = 2.75000$

$\frac{N_0}{F} = 2.50000$

$\frac{N_0}{G} = 2.25000$

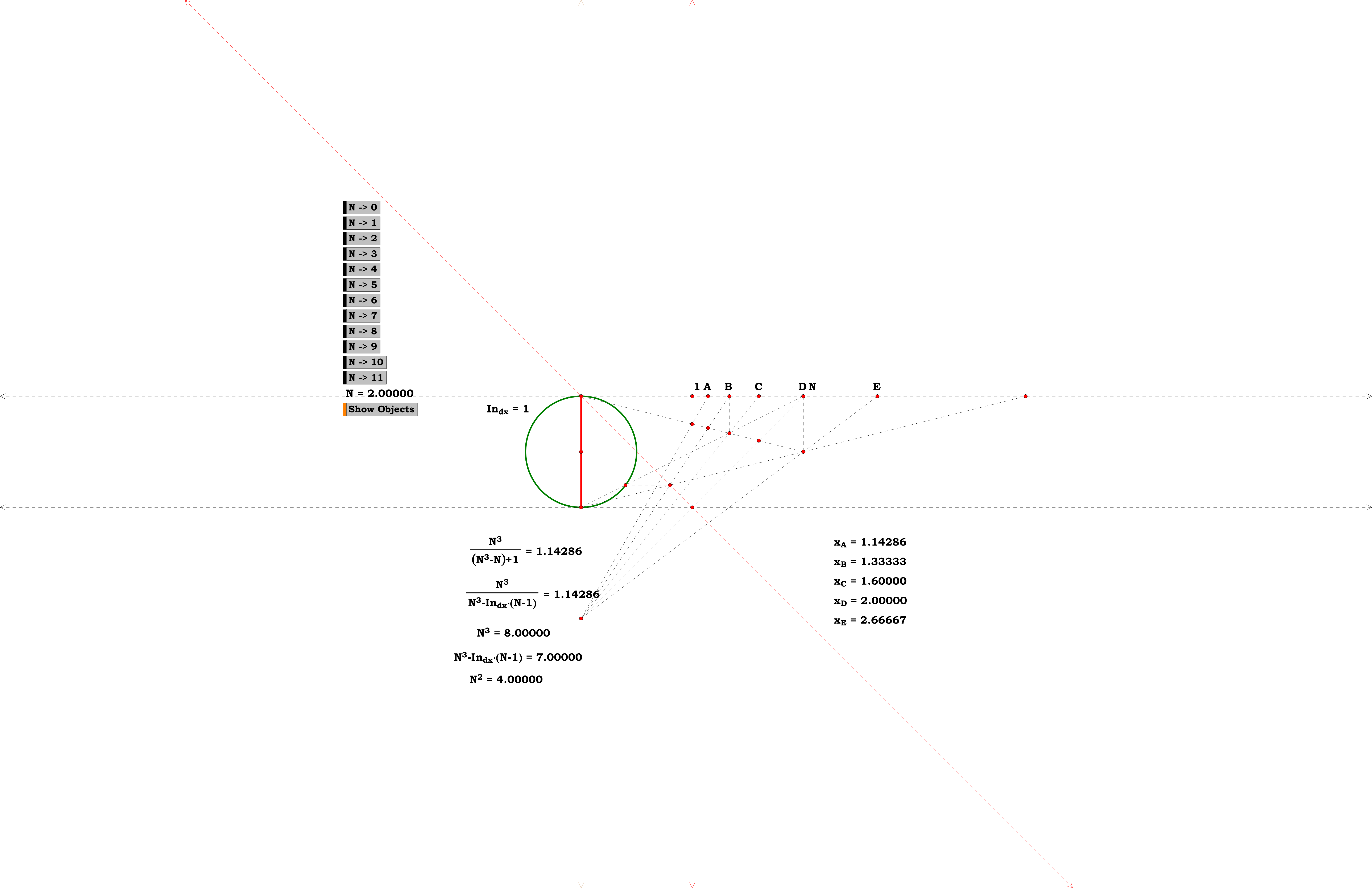
$\frac{N_0}{H} = 2.00000$

$\frac{N_0}{I} = 1.75000$

$\frac{N_0}{J} = 1.50000$

$\frac{N_0}{K} = 1.25000$

$\frac{N_0}{L} = 1.00000$



N = 2.00000

$\mathrm{In}_{dx} = 1$

$\frac{N^3}{(N^3-N)+1} = 1.14286$

$\frac{N^3}{N^3-\mathrm{In}_{dx}\cdot(N-1)} = 1.14286$

$N^3 = 8.00000$

$N^3-\mathrm{In}_{dx}\cdot(N-1) = 7.00000$

$N^2 = 4.00000$

$x_A = 1.14286$

$x_B = 1.33333$

$x_C = 1.60000$

$x_D = 2.00000$

$x_E = 2.66667$

Circle Points Circle Points Circle Points

Show Lines Hide Objects Show Lines Hide Objects Show Lines Hide Objects

0 0 0 0 0 0
1 1 1 1 1 1
2 2 2 2 2 2
3 3 3 3 3 3
4 4 4 4 4 4
5 5 5 5 5 5
6 6 6 6 6 6
7 7 7 7 7 7
8 8 8 8 8 8
9 9 9 9 9 9
10 10 10 10 10 10
11 11 11 11 11 11
12 12 12 12 12 12
13 13 13 13 13 13
14 14 14 14 14 14
15 15 15 15 15 15

$In_{dx} = 0$

$\frac{26.25000}{26.25000} = 1.00000$

$B_3 = 6.17647$

$\frac{N_1}{B_3 - N_1} + 1 = 5.25000$

$\frac{7}{3.75} = 1.86667$

A = 1.03960
B = 1.08247
C = 1.12903
D = 1.17978
E = 1.23529
F = 1.29630
G = 1.36364
H = 1.43836
I = 1.52174
J = 1.61538
K = 1.72131
L = 1.84211
M = 1.98113
N = 2.14286
O = 2.33333
P = 2.56098
Q = 2.83784
R = 3.18182
S = 3.62069
T = 4.20000
U = 5.00000

$N_1 = 5.00000$

$N_2 = 0.00000$

$n_a = 7.00000$

$n_b = 5.00000$

$r_{da} = 1.40000$

$\frac{n_a}{n_b} = 1.40000$

$N_1 \cdot \frac{n_a}{n_b} = 7.00000$

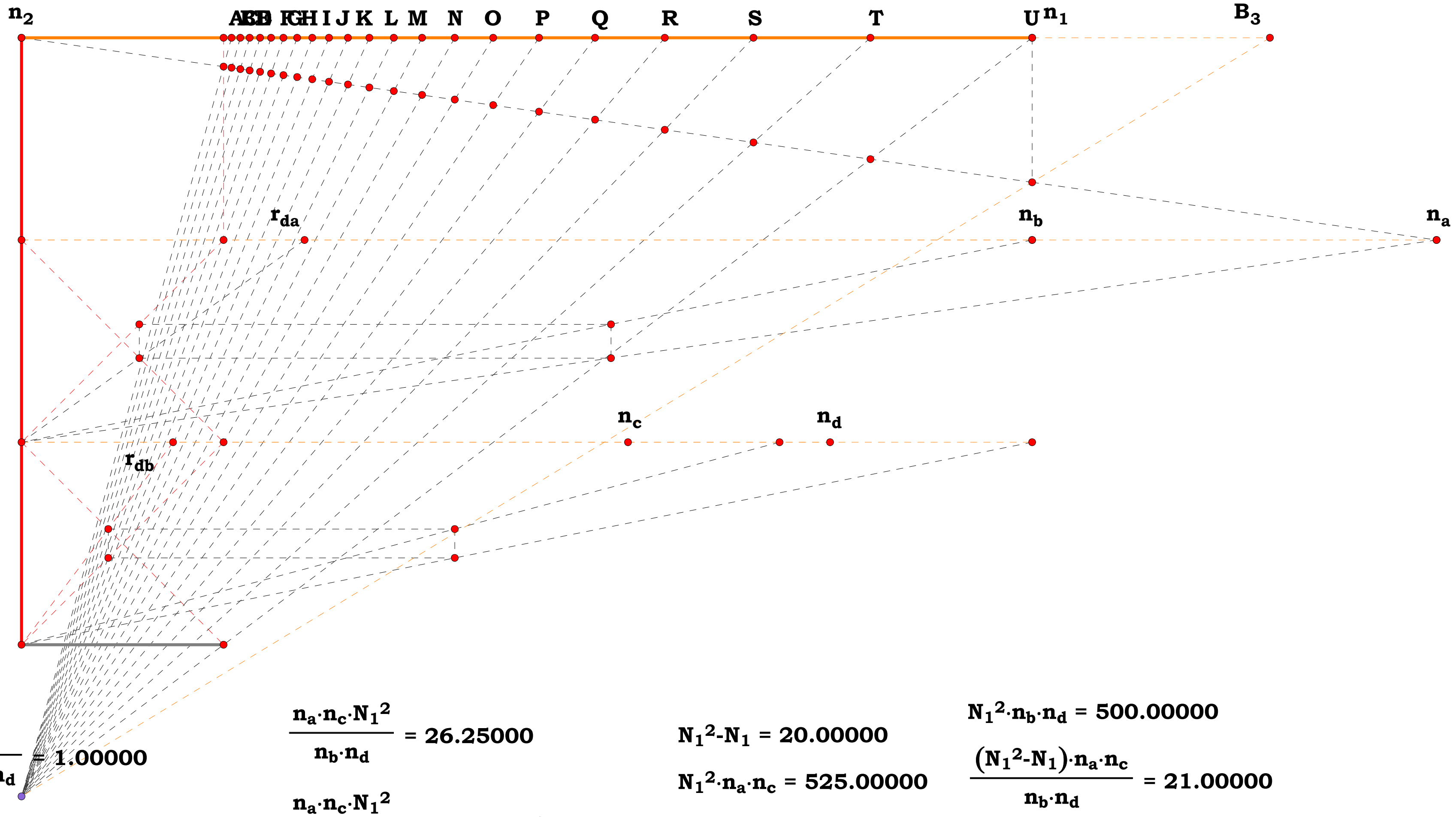
$n_c = 3.00000$

$n_d = 4.00000$

$r_{db} = 0.75000$

$\frac{n_c}{n_d} = 0.75000$

$\frac{n_c}{n_d} \cdot N_1 = 3.75000$



$\frac{N_1^2 \cdot n_a \cdot n_c}{N_1^2 \cdot n_a \cdot n_c - In_{dx} \cdot n_b \cdot n_d} = 1.00000$

$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} = 26.25000$

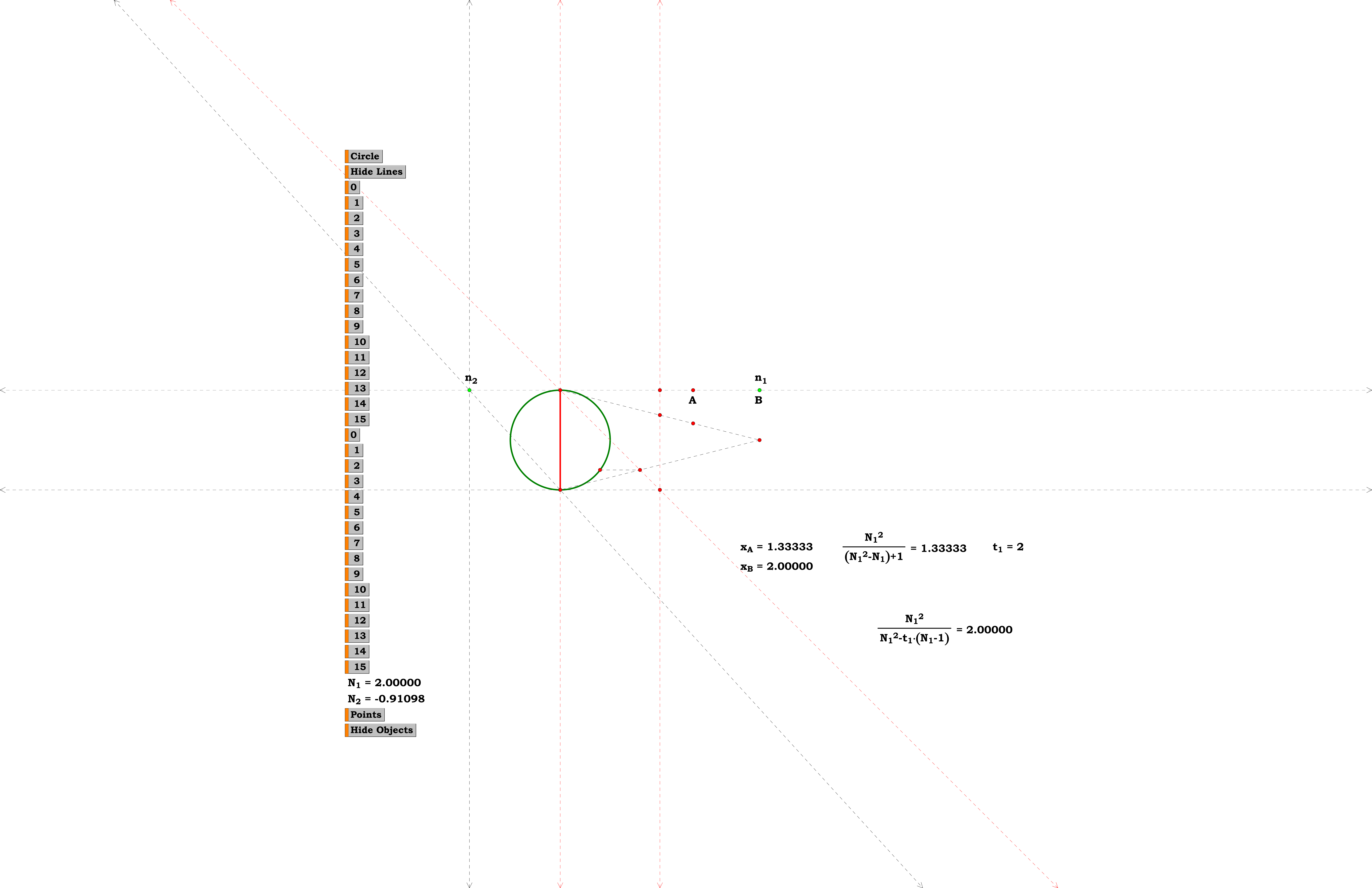
$\frac{n_a \cdot n_c \cdot N_1^2}{n_b \cdot n_d} - In_{dx} = 26.25000$

$N_1^2 - N_1 = 20.00000$

$N_1^2 \cdot n_a \cdot n_c = 525.00000$

$N_1^2 \cdot n_b \cdot n_d = 500.00000$

$\frac{(N_1^2 - N_1) \cdot n_a \cdot n_c}{n_b \cdot n_d} = 21.00000$



$N_1 = 2.00000$

$N_2 = -0.91098$

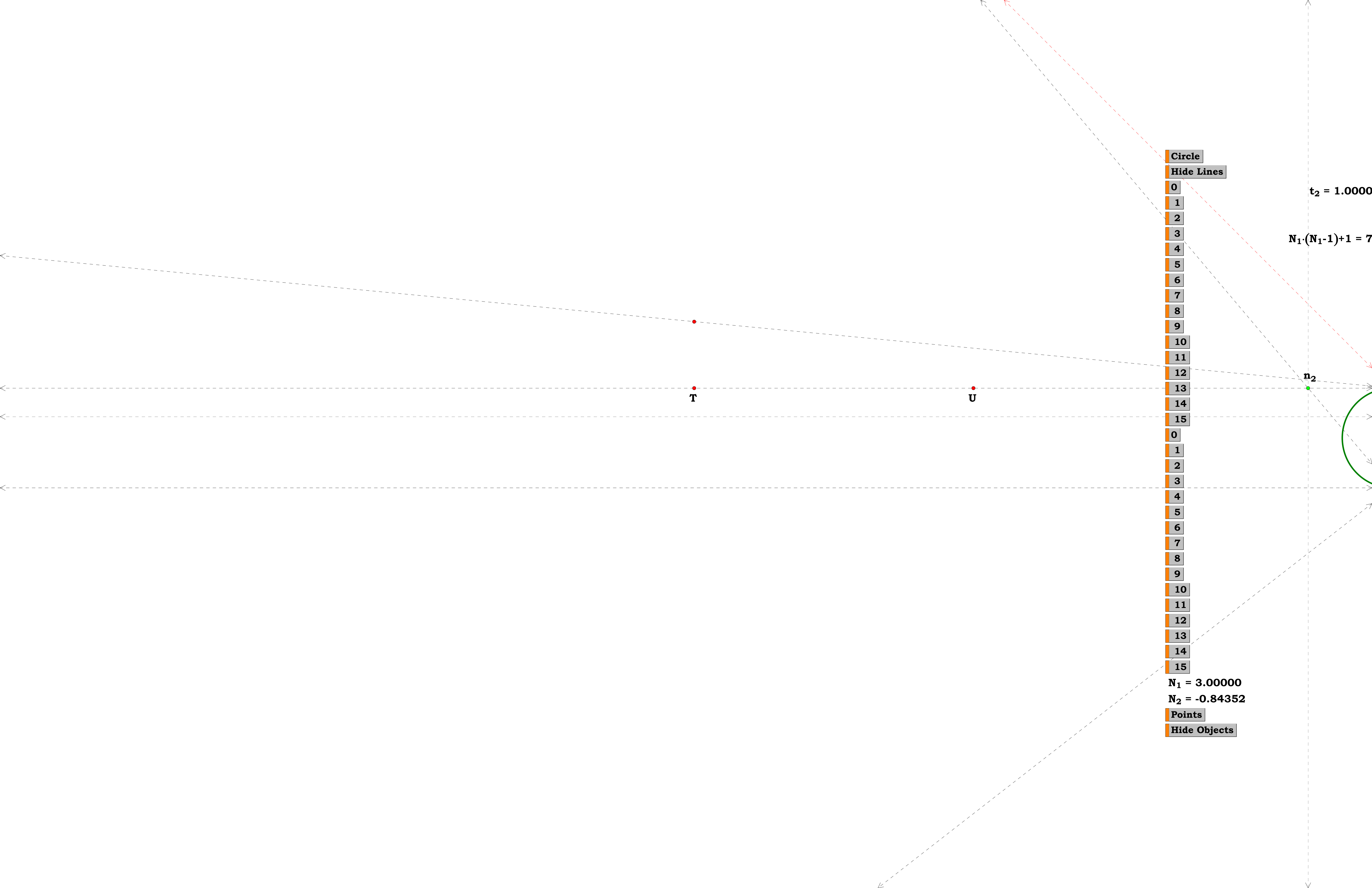
$x_A = 1.33333$

$x_B = 2.00000$

$$\frac{N_1^2}{(N_1^2 - N_1) + 1} = 1.33333$$

$t_1 = 2$

$$\frac{N_1^2}{N_1^2 - t_1 \cdot (N_1 - 1)} = 2.00000$$


Circle
Hide Lines
$N_1 = 3.00000$
$N_2 = -0.84352$
Points
Hide Objects
$t_2 = 1.0000$
$N_1 \cdot (N_1 - 1) + 1 = 7$
n_2
T
U

0000

= 7.00000

$x_I = 1.10526$

$x_J = 1.23529$

$x_K = 1.40000$

$x_L = 1.61538$

$x_M = 1.90909$

$x_N = 2.33333$

$x_O = 3.00000$

$x_P = 4.20000$

$x_Q = 7.00000$

$x_R = 21.00000$

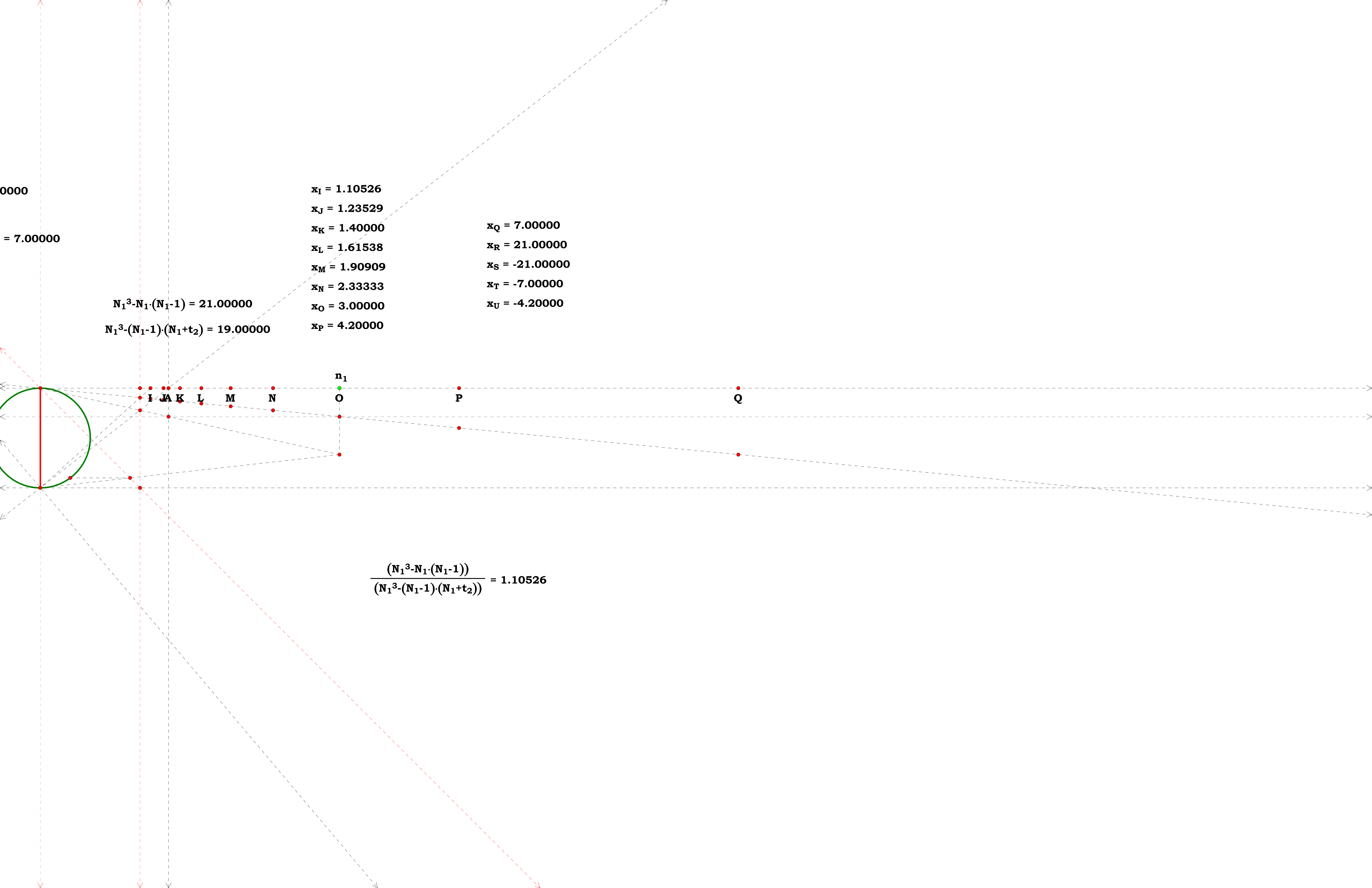
$x_S = -21.00000$

$x_T = -7.00000$

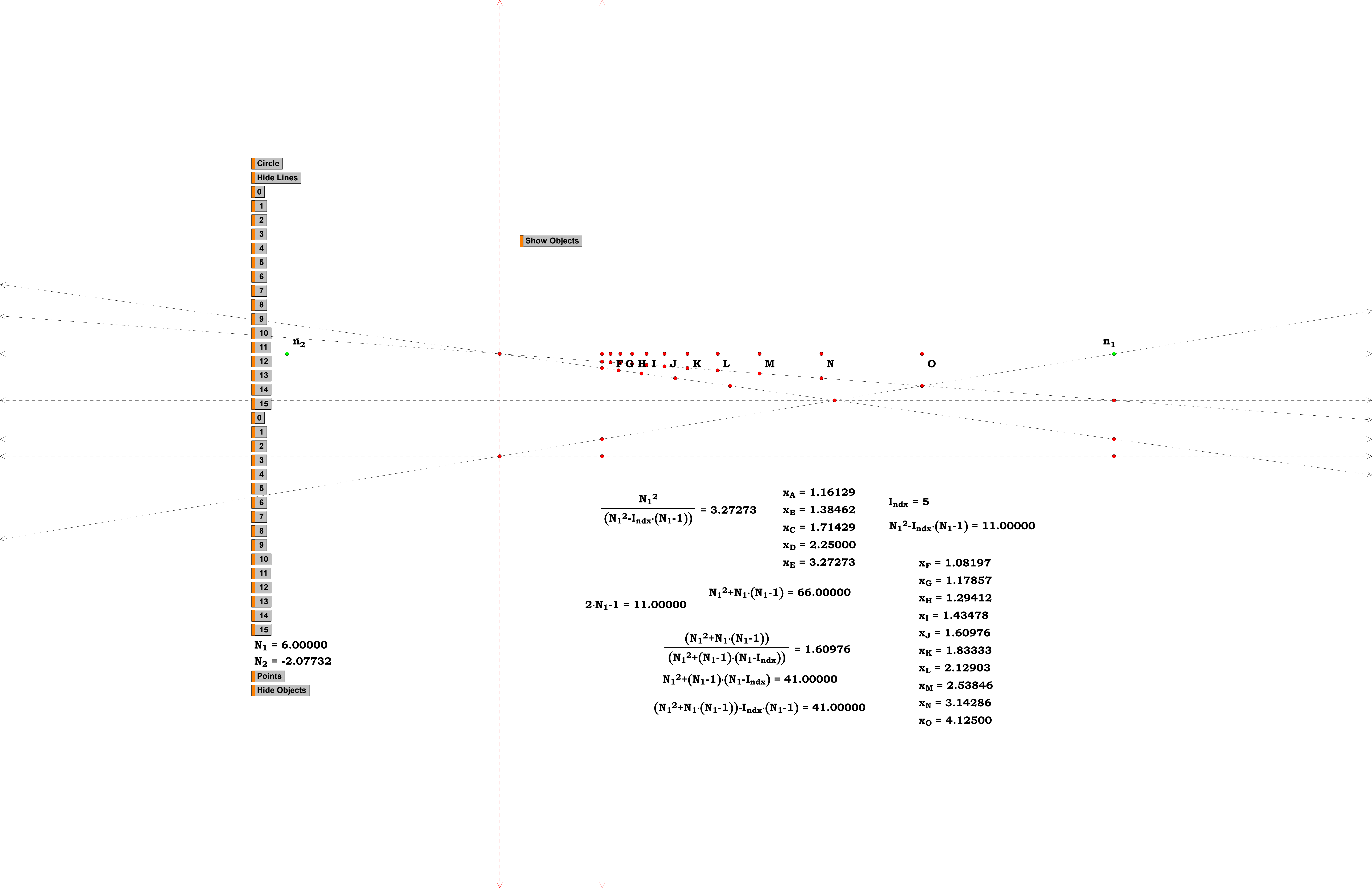
$x_U = -4.20000$

$N_1{}^3 - N_1 \cdot (N_1 - 1) = 21.00000$

$N_1{}^3 - (N_1 - 1) \cdot (N_1 + t_2) = 19.00000$



$$\frac{(N_1{}^3 - N_1 \cdot (N_1 - 1))}{(N_1{}^3 - (N_1 - 1) \cdot (N_1 + t_2))} = 1.10526$$



$N_1 = 6.00000$

$N_2 = -2.07732$

$\frac{N_1{}^2}{(N_1{}^2 - I_{ndx} \cdot (N_1 - 1))} = 3.27273$

$x_A = 1.16129$

$x_B = 1.38462$

$x_C = 1.71429$

$x_D = 2.25000$

$x_E = 3.27273$

$I_{ndx} = 5$

$N_1{}^2 - I_{ndx} \cdot (N_1 - 1) = 11.00000$

$x_F = 1.08197$

$x_G = 1.17857$

$x_H = 1.29412$

$x_I = 1.43478$

$x_J = 1.60976$

$x_K = 1.83333$

$x_L = 2.12903$

$x_M = 2.53846$

$x_N = 3.14286$

$x_O = 4.12500$

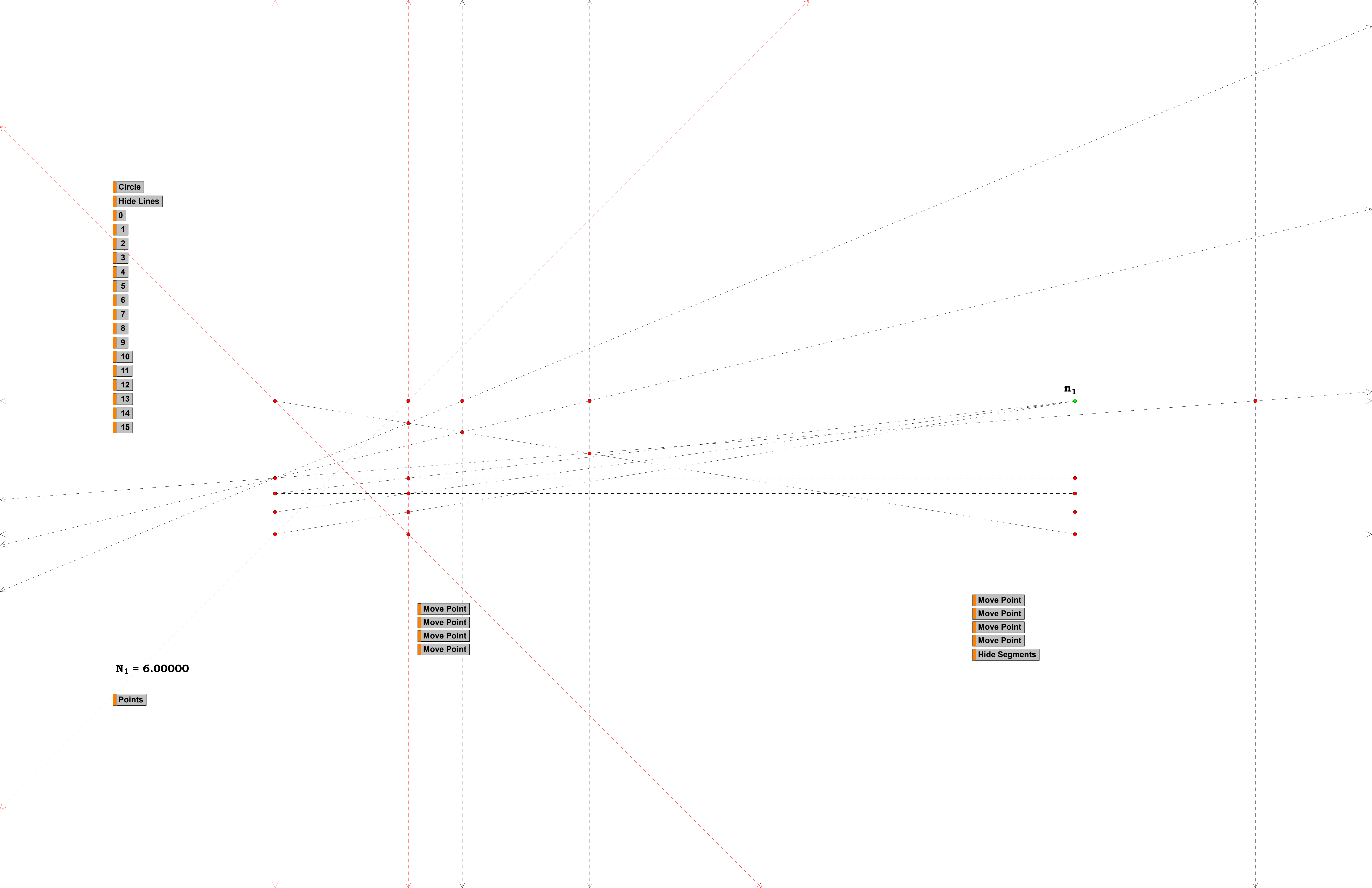
$N_1{}^2 + N_1 \cdot (N_1 - 1) = 66.00000$

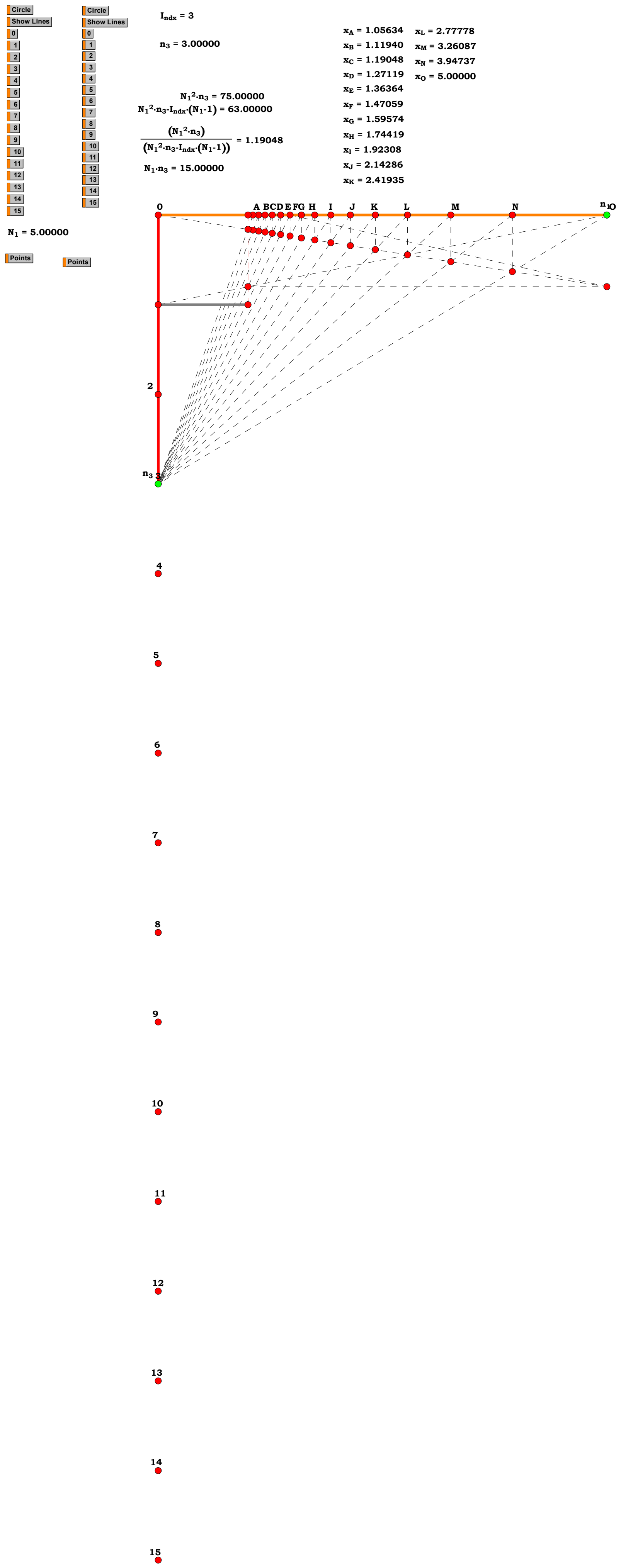
$2 \cdot N_1 - 1 = 11.00000$

$\frac{(N_1{}^2 + N_1 \cdot (N_1 - 1))}{(N_1{}^2 + (N_1 - 1) \cdot (N_1 - I_{ndx}))} = 1.60976$

$N_1{}^2 + (N_1 - 1) \cdot (N_1 - I_{ndx}) = 41.00000$

$(N_1{}^2 + N_1 \cdot (N_1 - 1)) - I_{ndx} \cdot (N_1 - 1) = 41.00000$


Circle
Hide Lines
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
n_1
Move Point
Move Point
Move Point
Move Point
Move Point
Move Point
Move Point
Move Point
Hide Segments
N_1 = 6.00000
Points



$I_{ndx} = 3$

$n_3 = 3.00000$

$N_1^2 \cdot n_3 = 75.00000$

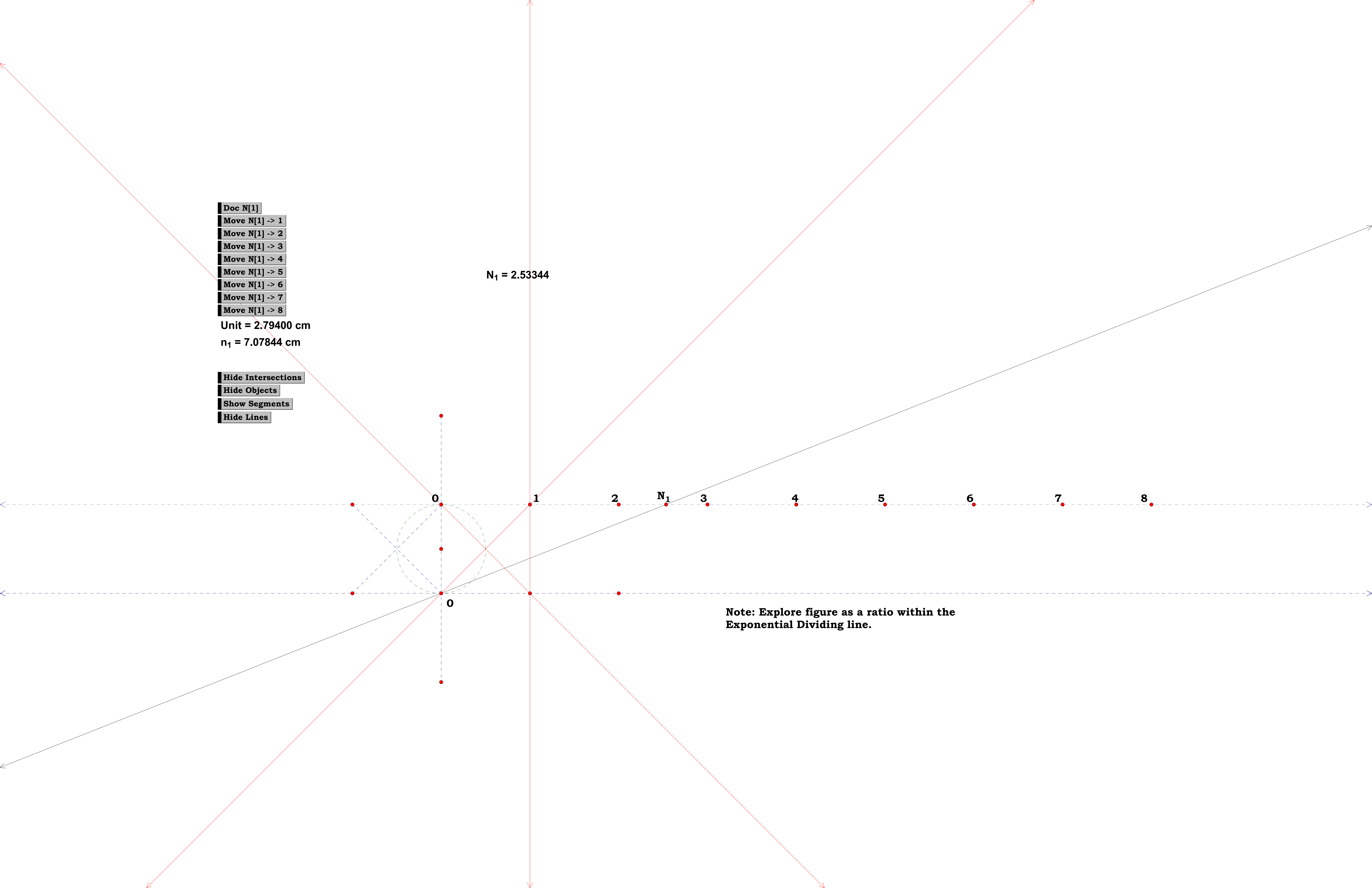
$N_1^2 \cdot n_3 - I_{ndx} \cdot (N_1 - 1) = 63.00000$

$$\frac{(N_1^2 \cdot n_3)}{(N_1^2 \cdot n_3 - I_{ndx} \cdot (N_1 - 1))} = 1.19048$$

$N_1 \cdot n_3 = 15.00000$

$N_1 = 5.00000$

$x_A = 1.05634$
$x_B = 1.11940$
$x_C = 1.19048$
$x_D = 1.27119$
$x_E = 1.36364$
$x_F = 1.47059$
$x_G = 1.59574$
$x_H = 1.74419$
$x_I = 1.92308$
$x_J = 2.14286$
$x_K = 2.41935$
$x_L = 2.77778$
$x_M = 3.26087$
$x_N = 3.94737$
$x_O = 5.00000$



Note: Explore figure as a ratio within the Exponential Dividing line.

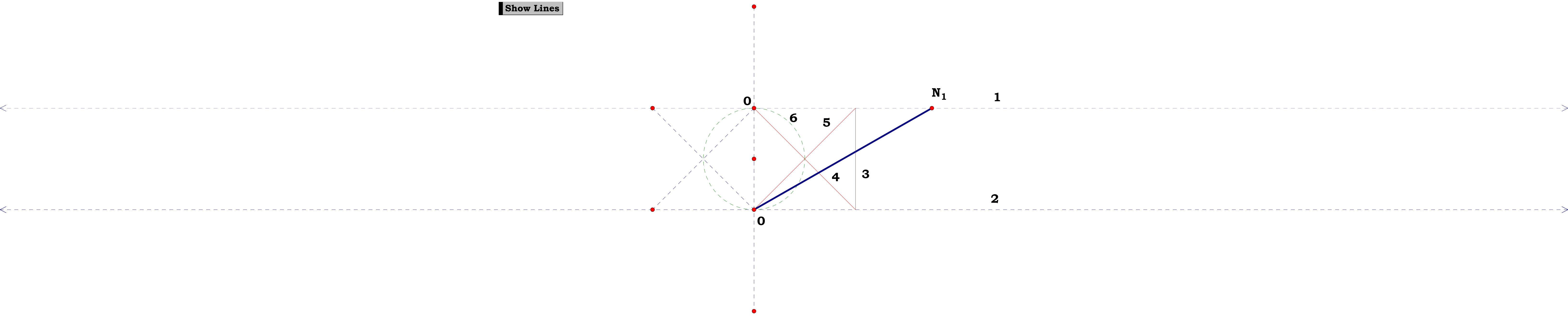
Plate Numbering System

Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.79400 cm

n_1 = 4.89828 cm

Show Intersections
Hide Objects
Hide Segments
Show Lines



Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.79400 cm

n_1 = 12.74233 cm

Hide Intersections
Show Lines
Hide Objects

Exponential Series

$0R_1 = 3.57870$ cm

$R_1 = 1.28085$

$N_1 = 4.56061$

$\frac{N_1}{N_1-1}-R_1 = 0.00000$

${\frac{N_1}{N_1-1}}^{-3}-R_{-3} = 0.00000$

${\frac{N_1}{N_1-1}}^{-2}-R_{-2} = 0.00000$

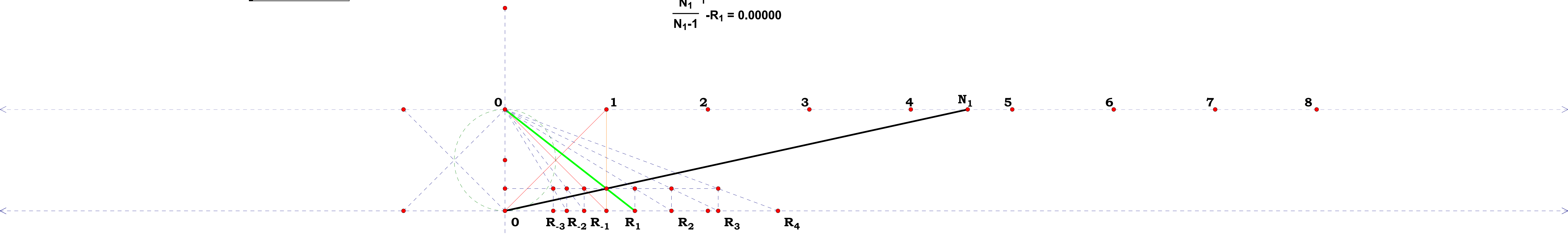
${\frac{N_1}{N_1-1}}^{-1}-R_{-1} = 0.00000$

${\frac{N_1}{N_1-1}}^{1}-R_1 = 0.00000$

${\frac{N_1}{N_1-1}}^{2}-R_2 = 0.00000$

${\frac{N_1}{N_1-1}}^{3}-R_3 = 0.00000$

${\frac{N_1}{N_1-1}}^{4}-R_4 = 0.00000$



$\frac{R_{-2}}{R_{-3}} = 1.28085$

$\frac{N_1}{N_1-1} = 1.28085$

$R_{-3} = 0.47589$
$R_{-2} = 0.60954$
$R_{-1} = 0.78073$

$R_2 = 1.64058$
$R_3 = 2.10134$
$R_4 = 2.69150$

$0R_{-3} = 1.32963$ cm
$0R_{-2} = 1.70306$ cm
$0R_{-1} = 2.18136$ cm

$0R_2 = 4.58378$ cm
$0R_3 = 5.87114$ cm
$0R_4 = 7.52005$ cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.79400 cm

n_1 = 8.80533 cm

N_1 = 3.15152

Hide Intersections

Hide Objects

Hide Segments

Show Lines

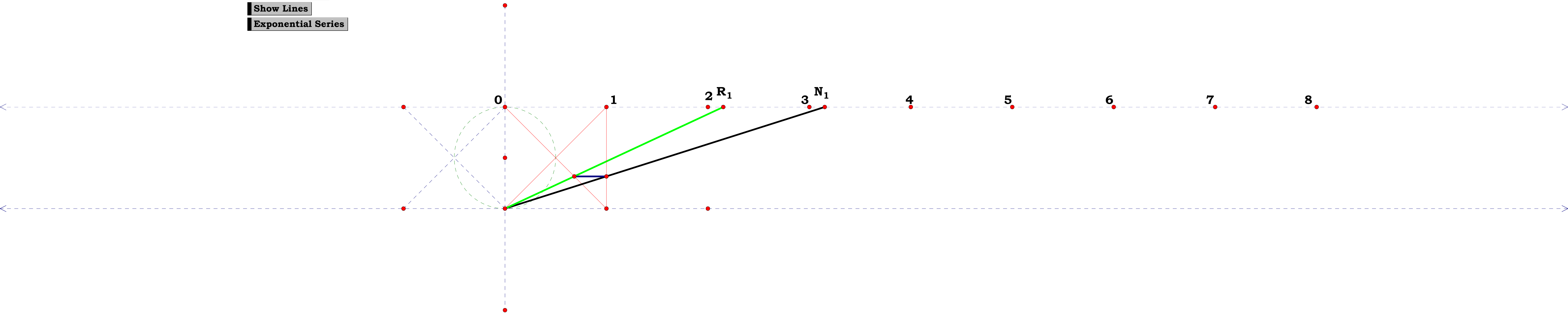
Exponential Series

$0R_1$ = 6.01133 cm

R_1 = 2.15152

N_1-R_1 = 1.00000

N_1-1-R_1 = 0.00000



Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.79400 cm

n_1 = 9.03817 cm

N_1 = 3.23485

Hide Intersections
Hide Segments
Show Lines

Show Objects

$0R_1$ = 1.93028 cm

R_1 = 0.69087

$\frac{N_1\text{-}1}{N_1}\text{-}R_1 = 0.00000$

$\frac{N_1\text{-}1}{N_1}^{4}\text{-}R_4 = 0.00000$

$\frac{N_1\text{-}1}{N_1}^{3}\text{-}R_3 = 0.00000$

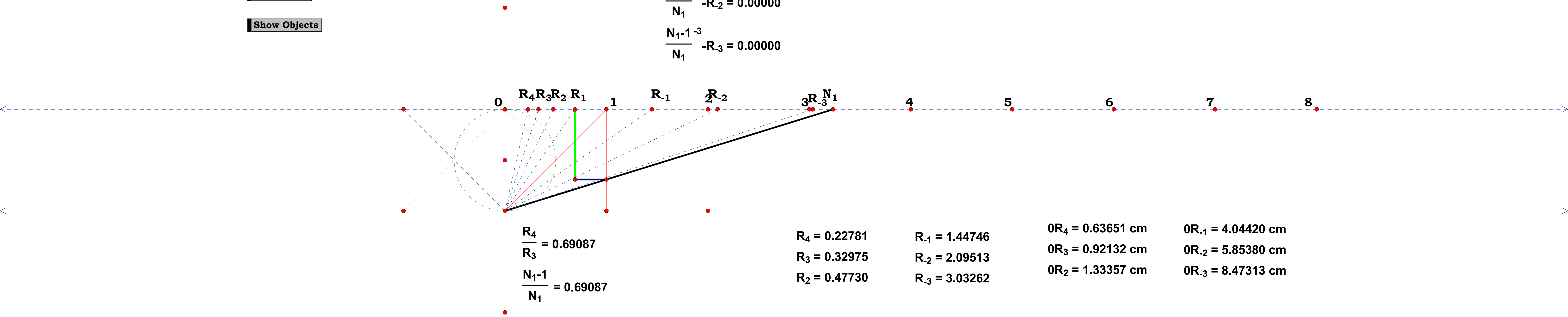
$\frac{N_1\text{-}1}{N_1}^{2}\text{-}R_2 = 0.00000$

$\frac{N_1\text{-}1}{N_1}^{1}\text{-}R_1 = 0.00000$

$\frac{N_1\text{-}1}{N_1}^{-1}\text{-}R_{-1} = 0.00000$

$\frac{N_1\text{-}1}{N_1}^{-2}\text{-}R_{-2} = 0.00000$

$\frac{N_1\text{-}1}{N_1}^{-3}\text{-}R_{-3} = 0.00000$



$\frac{R_4}{R_3} = 0.69087$

$\frac{N_1\text{-}1}{N_1} = 0.69087$

R_4 = 0.22781
R_3 = 0.32975
R_2 = 0.47730

R_{-1} = 1.44746
R_{-2} = 2.09513
R_{-3} = 3.03262

$0R_4$ = 0.63651 cm
$0R_3$ = 0.92132 cm
$0R_2$ = 1.33357 cm

$0R_{-1}$ = 4.04420 cm
$0R_{-2}$ = 5.85380 cm
$0R_{-3}$ = 8.47313 cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.79400 cm

n_1 = 8.03338 cm

N_1 = 2.87523

Hide Intersections

Hide Objects

Hide Segments

Show Lines

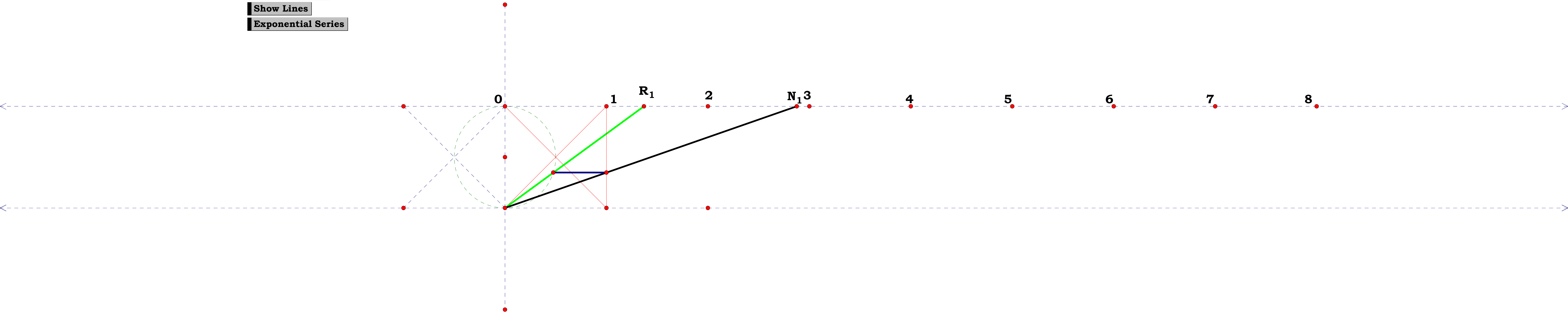
Exponential Series

$0R_1$ = 3.82607 cm

R_1 = 1.36939

$\sqrt{N_1\text{-}1}$ = 1.36939

$\sqrt{N_1\text{-}1}\text{-}R_1$ = 0.00000



Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.81517 cm

n_1 = 4.62741 cm

Hide Intersections
Hide Objects
Hide Segments
Show Lines
Exponential Series

$0R_1$ = 3.50871 cm

R_1 = 1.24636

N_1 = 1.64374

$\frac{1}{\sqrt{N_1-1}}-R_1 = 0.00000$

$\frac{1}{\sqrt{N_1-1}}^{-3}-R_{-3} = 0.00000$

$\frac{1}{\sqrt{N_1-1}}^{-2}-R_{-2} = 0.00000$

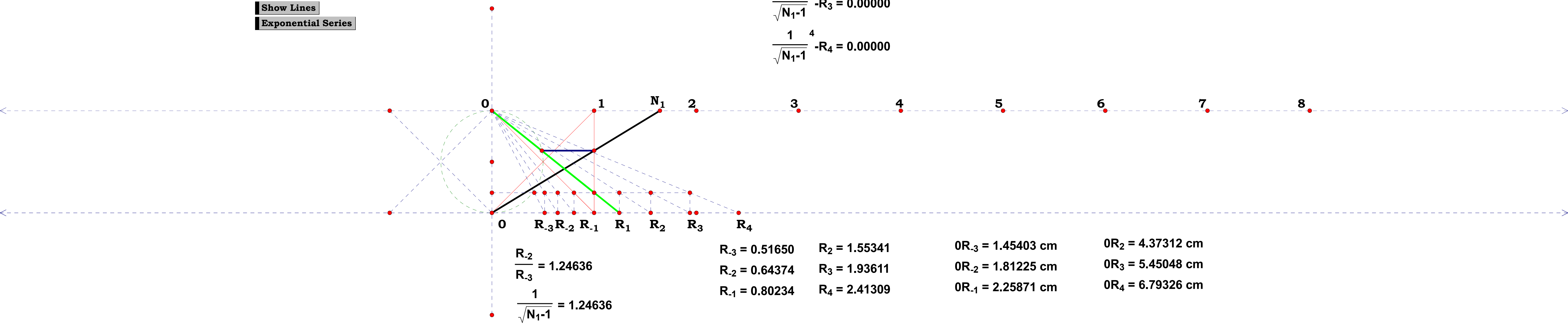
$\frac{1}{\sqrt{N_1-1}}^{-1}-R_{-1} = 0.00000$

$\frac{1}{\sqrt{N_1-1}}^{1}-R_{1} = 0.00000$

$\frac{1}{\sqrt{N_1-1}}^{2}-R_{2} = 0.00000$

$\frac{1}{\sqrt{N_1-1}}^{3}-R_{3} = 0.00000$

$\frac{1}{\sqrt{N_1-1}}^{4}-R_{4} = 0.00000$



$\frac{R_{-2}}{R_{-3}} = 1.24636$

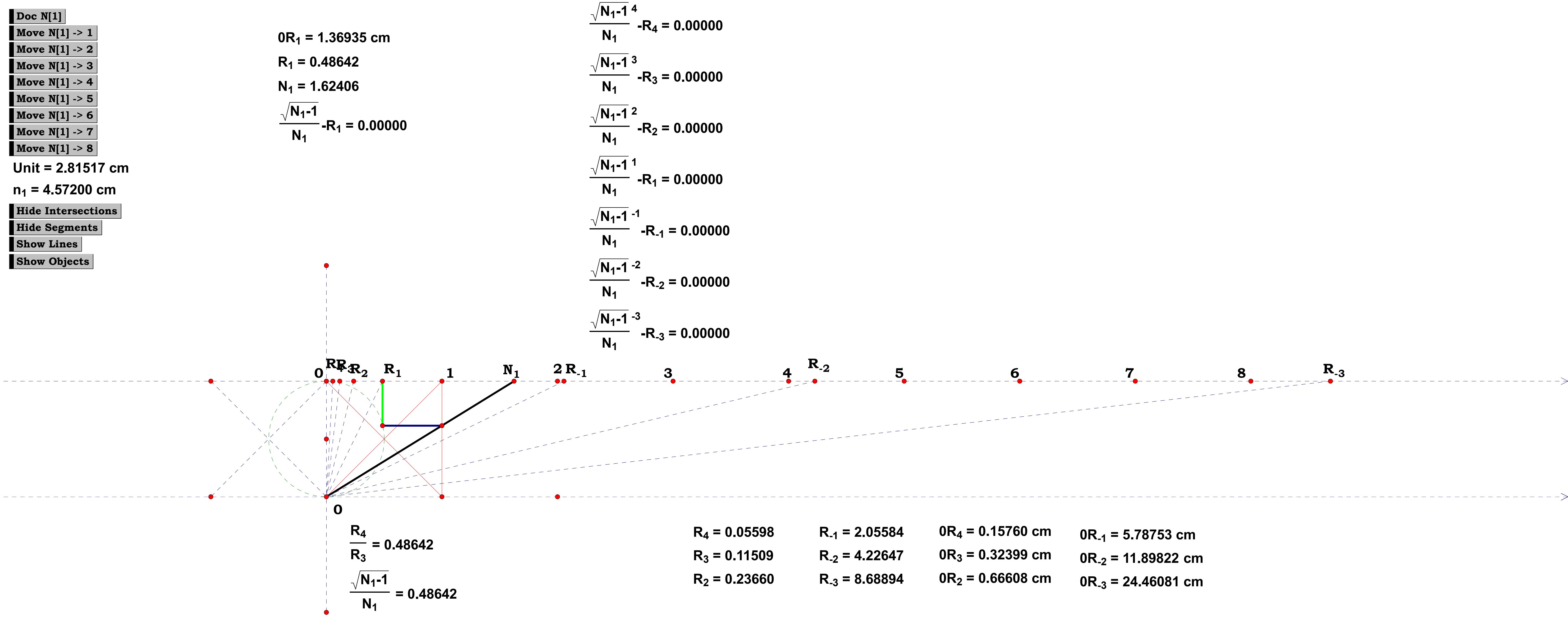
$\frac{1}{\sqrt{N_1-1}} = 1.24636$

R_{-3} = 0.51650
R_{-2} = 0.64374
R_{-1} = 0.80234

R_2 = 1.55341
R_3 = 1.93611
R_4 = 2.41309

$0R_{-3}$ = 1.45403 cm
$0R_{-2}$ = 1.81225 cm
$0R_{-1}$ = 2.25871 cm

$0R_2$ = 4.37312 cm
$0R_3$ = 5.45048 cm
$0R_4$ = 6.79326 cm



Unit = 2.81517 cm

n_1 = 4.57200 cm

$0R_1$ = 1.36935 cm

R_1 = 0.48642

N_1 = 1.62406

$\frac{\sqrt{N_1-1}}{N_1} - R_1 = 0.00000$

$\frac{\sqrt{N_1-1}^{\,4}}{N_1} - R_4 = 0.00000$

$\frac{\sqrt{N_1-1}^{\,3}}{N_1} - R_3 = 0.00000$

$\frac{\sqrt{N_1-1}^{\,2}}{N_1} - R_2 = 0.00000$

$\frac{\sqrt{N_1-1}^{\,1}}{N_1} - R_1 = 0.00000$

$\frac{\sqrt{N_1-1}^{\,-1}}{N_1} - R_{-1} = 0.00000$

$\frac{\sqrt{N_1-1}^{\,-2}}{N_1} - R_{-2} = 0.00000$

$\frac{\sqrt{N_1-1}^{\,-3}}{N_1} - R_{-3} = 0.00000$

$\frac{R_4}{R_3} = 0.48642$

$\frac{\sqrt{N_1-1}}{N_1} = 0.48642$

R_4 = 0.05598

R_3 = 0.11509

R_2 = 0.23660

R_{-1} = 2.05584

R_{-2} = 4.22647

R_{-3} = 8.68894

$0R_4$ = 0.15760 cm

$0R_3$ = 0.32399 cm

$0R_2$ = 0.66608 cm

$0R_{-1}$ = 5.78753 cm

$0R_{-2}$ = 11.89822 cm

$0R_{-3}$ = 24.46081 cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.81517 cm

n_1 = 4.89896 cm

Hide Intersections

Show Lines

Hide Segments

Hide Objects

Exponential Series

$0R_1$ = 3.80323 cm

R_1 = 1.35098

N_1 = 1.74020

$\frac{1}{N_1-1}-R_1 = 0.00000$

$\left(\frac{1}{N_1-1}\right)^{-3}-R_{-3} = 0.00000$

$\left(\frac{1}{N_1-1}\right)^{-2}-R_{-2} = 0.00000$

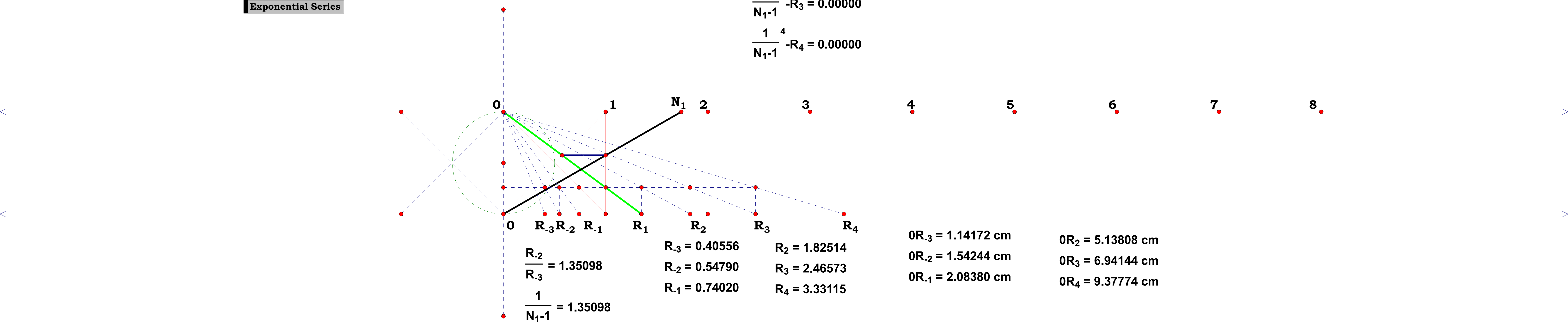
$\left(\frac{1}{N_1-1}\right)^{-1}-R_{-1} = 0.00000$

$\left(\frac{1}{N_1-1}\right)^{1}-R_{1} = 0.00000$

$\left(\frac{1}{N_1-1}\right)^{2}-R_{2} = 0.00000$

$\left(\frac{1}{N_1-1}\right)^{3}-R_{3} = 0.00000$

$\left(\frac{1}{N_1-1}\right)^{4}-R_{4} = 0.00000$



$\frac{R_{-2}}{R_{-3}} = 1.35098$

$\frac{1}{N_1-1} = 1.35098$

R_{-3} = 0.40556

R_{-2} = 0.54790

R_{-1} = 0.74020

R_2 = 1.82514

R_3 = 2.46573

R_4 = 3.33115

$0R_{-3}$ = 1.14172 cm

$0R_{-2}$ = 1.54244 cm

$0R_{-1}$ = 2.08380 cm

$0R_2$ = 5.13808 cm

$0R_3$ = 6.94144 cm

$0R_4$ = 9.37774 cm

▮ Doc N[1]
▮ Move N[1] -> 1
▮ Move N[1] -> 2
▮ Move N[1] -> 3
▮ Move N[1] -> 4
▮ Move N[1] -> 5
▮ Move N[1] -> 6
▮ Move N[1] -> 7
▮ Move N[1] -> 8

Unit = 2.79400 cm

$n_1 = 4.33917$ cm

▮ Hide Intersections
▮ Hide Segments
▮ Show Lines

$0R_1 = 1.79906$ cm

$R_1 = 0.64390$

$N_1 = 1.55303$

$\frac{1}{N_1} - R_1 = 0.00000$

$\frac{1}{N_1}^{4} - R_4 = 0.00000$

$\frac{1}{N_1}^{3} - R_3 = 0.00000$

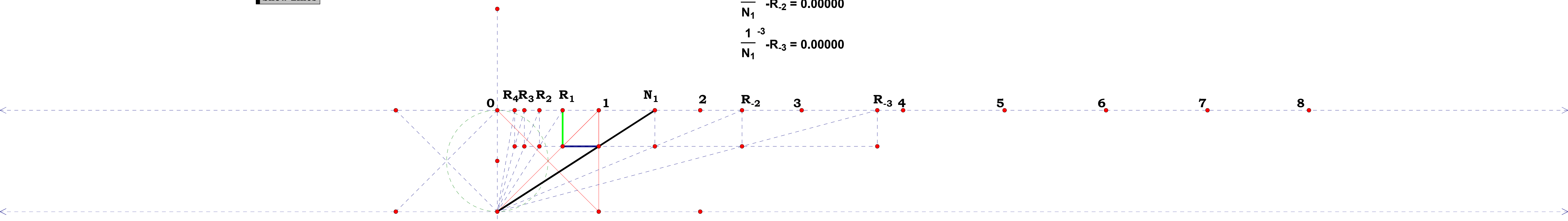
$\frac{1}{N_1}^{2} - R_2 = 0.00000$

$\frac{1}{N_1}^{1} - R_1 = 0.00000$

$\frac{1}{N_1}^{-1} - N_1 = 0.00000$

$\frac{1}{N_1}^{-2} - R_{-2} = 0.00000$

$\frac{1}{N_1}^{-3} - R_{-3} = 0.00000$



$\frac{R_4}{R_3} = 0.64390$

$\frac{1}{N_1} = 0.64390$

$R_4 = 0.17190$

$R_3 = 0.26697$

$R_2 = 0.41461$

$R_{-2} = 2.41190$

$R_{-3} = 3.74576$

$0R_4 = 0.48029$ cm

$0R_3 = 0.74591$ cm

$0R_2 = 1.15842$ cm

$0R_{-2} = 6.73886$ cm

$0R_{-3} = 10.46565$ cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.81517 cm

n_1 = 0.81277 cm

N_1 = 0.28871

Hide Intersections

Hide Objects

Show Lines

Exponential Series

$0R_1$ = 3.62793 cm

R_1 = 1.28871

$(N_1+1)-R_1$ = 0.00000

$(N_1+1)^{-3}-R_{-3}$ = 0.00000

$(N_1+1)^{-2}-R_{-2}$ = 0.00000

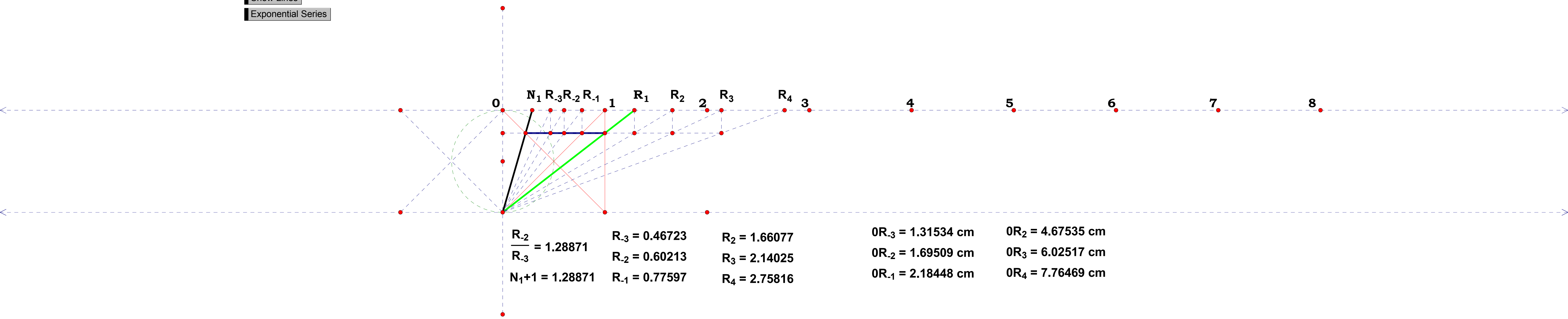
$(N_1+1)^{-1}-R_{-1}$ = 0.00000

$(N_1+1)^{1}-R_1$ = 0.00000

$(N_1+1)^{2}-R_2$ = 0.00000

$(N_1+1)^{3}-R_3$ = 0.00000

$(N_1+1)^{4}-R_4$ = 0.00000



$\frac{R_{-2}}{R_{-3}}$ = 1.28871

N_1+1 = 1.28871

R_{-3} = 0.46723

R_{-2} = 0.60213

R_{-1} = 0.77597

R_2 = 1.66077

R_3 = 2.14025

R_4 = 2.75816

$0R_{-3}$ = 1.31534 cm

$0R_{-2}$ = 1.69509 cm

$0R_{-1}$ = 2.18448 cm

$0R_2$ = 4.67535 cm

$0R_3$ = 6.02517 cm

$0R_4$ = 7.76469 cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.77283 cm

$n_1 = 7.11974$ cm

Hide Intersections

Show Lines

Hide Objects

Exponential Series

$0R_1 = 3.85273$ cm

$R_1 = 1.38946$

$N_1 = 2.56768$

$\frac{N_1+1}{N_1} - R_1 = 0.00000$

$\frac{N_1+1}{N_1}^{-3} - R_{-3} = 0.00000$

$\frac{N_1+1}{N_1}^{-2} - R_{-2} = 0.00000$

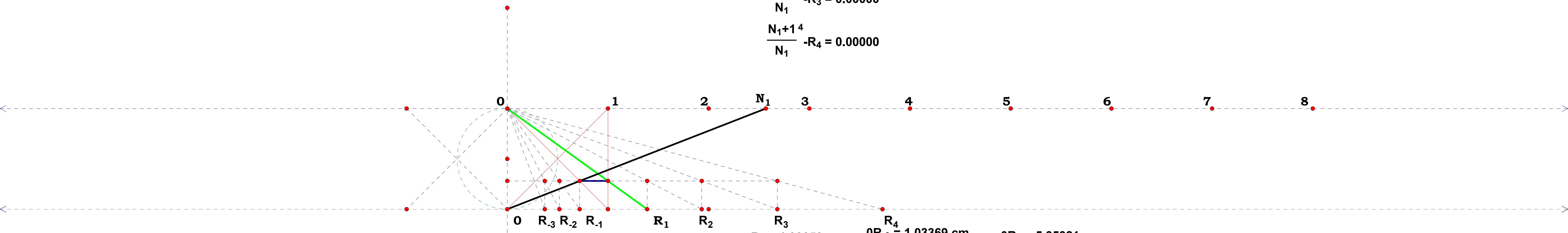
$\frac{N_1+1}{N_1}^{-1} - R_{-1} = 0.00000$

$\frac{N_1+1}{N_1}^{1} - R_1 = 0.00000$

$\frac{N_1+1}{N_1}^{2} - R_2 = 0.00000$

$\frac{N_1+1}{N_1}^{3} - R_3 = 0.00000$

$\frac{N_1+1}{N_1}^{4} - R_4 = 0.00000$



$\frac{R_{-2}}{R_{-3}} = 1.38946$

$\frac{N_1+1}{N_1} = 1.38946$

$R_{-3} = 0.37279$

$R_{-2} = 0.51798$

$R_{-1} = 0.71971$

$R_2 = 1.93059$

$R_3 = 2.68247$

$R_4 = 3.72718$

$0R_{-3} = 1.03369$ cm

$0R_{-2} = 1.43626$ cm

$0R_{-1} = 1.99562$ cm

$0R_2 = 5.35321$ cm

$0R_3 = 7.43805$ cm

$0R_4 = 10.33485$ cm

Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.77283 cm

n_1 = 8.10683 cm

Hide Intersections
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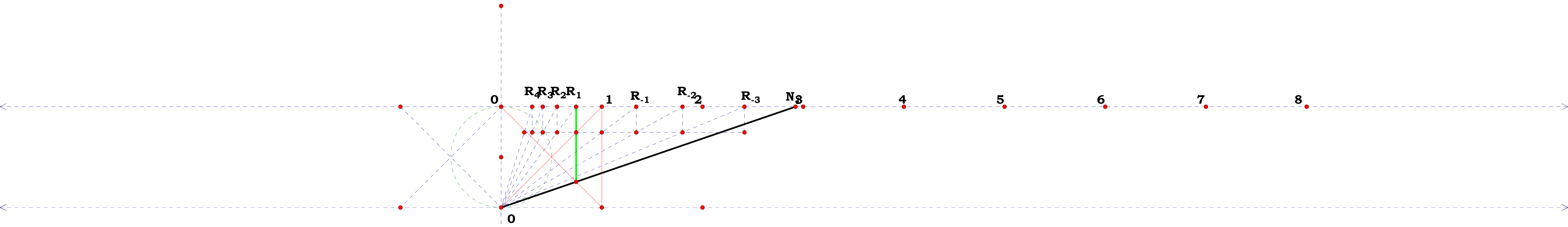
$0R_1$ = 2.06614 cm

R_1 = 0.74514

N_1 = 2.92366

$\frac{N_1}{N_1+1} - R_1 = 0.00000$

$\frac{N_1}{N_1+1}^4 - R_4 = 0.00000$



$\frac{R_4}{R_3} = 0.74514$

$\frac{N_1}{N_1+1} = 0.74514$

R_4 = 0.30828
R_3 = 0.41372
R_2 = 0.55523

R_{-1} = 1.34204
R_{-2} = 1.80106
R_{-3} = 2.41709

$0R_4$ = 0.85480 cm
$0R_3$ = 1.14718 cm
$0R_2$ = 1.53955 cm

$0R_{-1}$ = 3.72124 cm
$0R_{-2}$ = 4.99405 cm
$0R_{-3}$ = 6.70219 cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.83633 cm

n_1 = 6.91100 cm

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Exponential Series

$0R_1 = 4.42740$ cm

$R_1 = 1.56096$

$N_1 = 2.43660$

$\sqrt{N_1} - R_1 = 0.00000$

$\sqrt{N_1^{-3}} - R_{-3} = 0.00000$

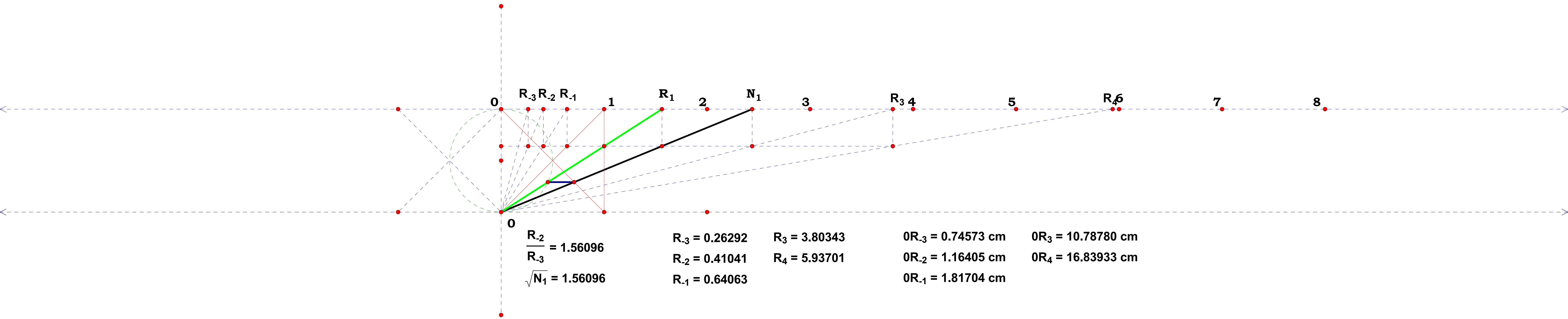
$\sqrt{N_1^{-2}} - R_{-2} = 0.00000$

$\sqrt{N_1^{-1}} - R_{-1} = 0.00000$

$\sqrt{N_1^{2}} - N_1 = 0.00000$

$\sqrt{N_1^{3}} - R_3 = 0.00000$

$\sqrt{N_1^{4}} - R_4 = 0.00000$



$\frac{R_{-2}}{R_{-3}} = 1.56096$

$\sqrt{N_1} = 1.56096$

$R_{-3} = 0.26292$

$R_{-2} = 0.41041$

$R_{-1} = 0.64063$

$R_3 = 3.80343$

$R_4 = 5.93701$

$0R_{-3} = 0.74573$ cm

$0R_{-2} = 1.16405$ cm

$0R_{-1} = 1.81704$ cm

$0R_3 = 10.78780$ cm

$0R_4 = 16.83933$ cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.79400 cm

n_1 = 1.60557 cm

Hide Intersections

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Exponential Series

$0R_1$ = 3.68574 cm

R_1 = 1.31916

N_1 = 0.57465

$\frac{1}{\sqrt{N_1}} - R_1 = 0.00000$

$\left(\frac{1}{\sqrt{N_1}}\right)^{-3} - R_{-3} = 0.00000$

$\left(\frac{1}{\sqrt{N_1}}\right)^{-2} - R_{-2} = 0.00000$

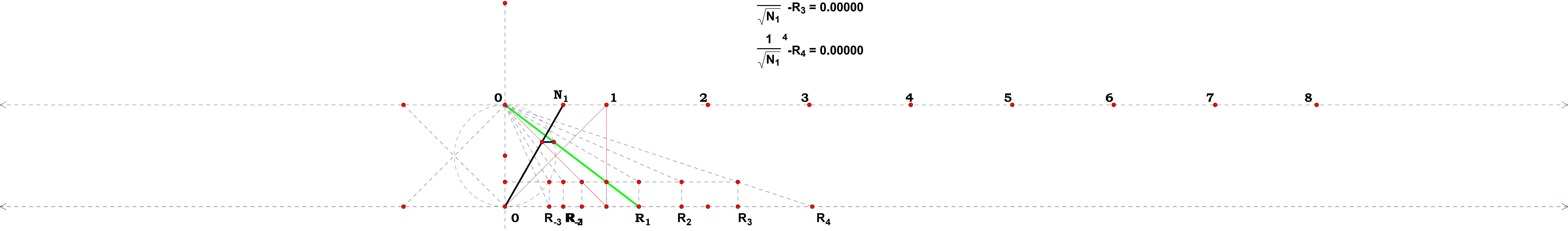
$\left(\frac{1}{\sqrt{N_1}}\right)^{-1} - R_{-1} = 0.00000$

$\left(\frac{1}{\sqrt{N_1}}\right)^{1} - R_{1} = 0.00000$

$\left(\frac{1}{\sqrt{N_1}}\right)^{2} - R_{2} = 0.00000$

$\left(\frac{1}{\sqrt{N_1}}\right)^{3} - R_{3} = 0.00000$

$\left(\frac{1}{\sqrt{N_1}}\right)^{4} - R_{4} = 0.00000$



$\frac{R_{-2}}{R_{-3}} = 1.31916$

$\frac{1}{\sqrt{N_1}} = 1.31916$

R_{-3} = 0.43562

R_{-2} = 0.57465

R_{-1} = 0.75806

R_2 = 1.74019

R_3 = 2.29560

R_4 = 3.02827

$0R_{-3}$ = 1.21711 cm

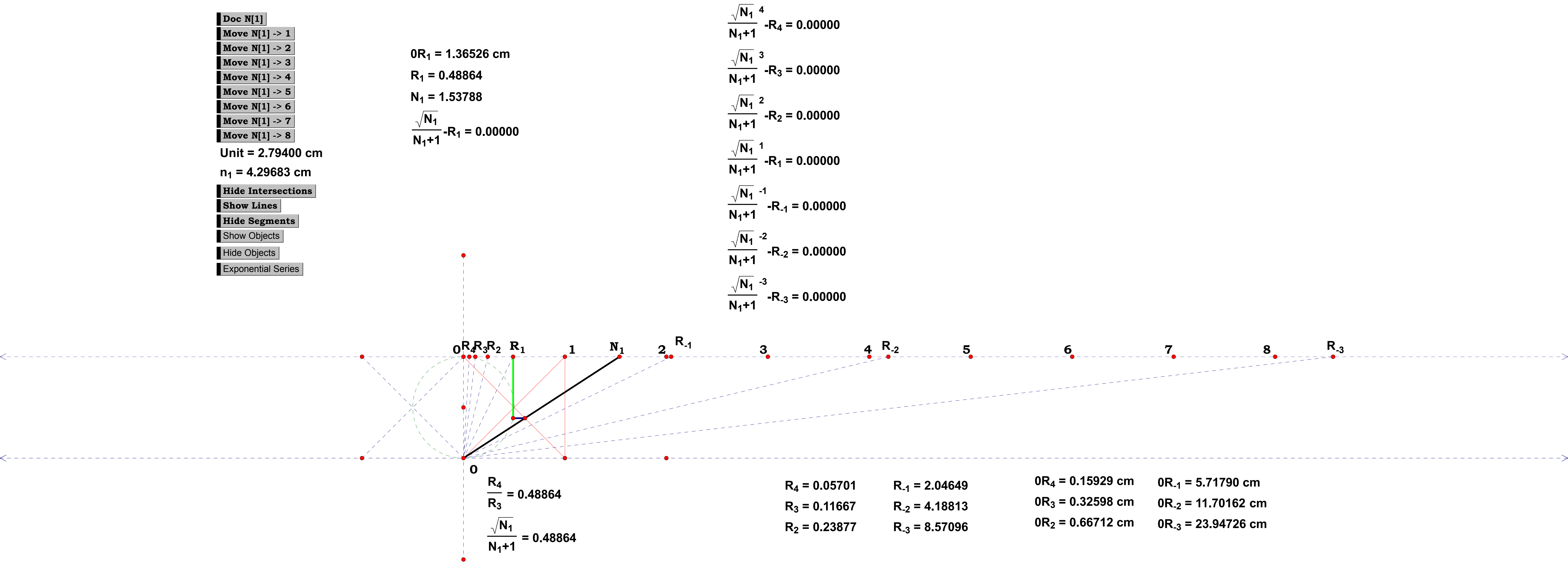
$0R_{-2}$ = 1.60557 cm

$0R_{-1}$ = 2.11801 cm

$0R_2$ = 4.86210 cm

$0R_3$ = 6.41390 cm

$0R_4$ = 8.46099 cm



Unit = 2.79400 cm

$n_1 = 4.29683$ cm

$0R_1 = 1.36526$ cm

$R_1 = 0.48864$

$N_1 = 1.53788$

$\frac{\sqrt{N_1}}{N_1+1} - R_1 = 0.00000$

$\left(\frac{\sqrt{N_1}}{N_1+1}\right)^4 - R_4 = 0.00000$

$\left(\frac{\sqrt{N_1}}{N_1+1}\right)^3 - R_3 = 0.00000$

$\left(\frac{\sqrt{N_1}}{N_1+1}\right)^2 - R_2 = 0.00000$

$\left(\frac{\sqrt{N_1}}{N_1+1}\right)^1 - R_1 = 0.00000$

$\left(\frac{\sqrt{N_1}}{N_1+1}\right)^{-1} - R_{-1} = 0.00000$

$\left(\frac{\sqrt{N_1}}{N_1+1}\right)^{-2} - R_{-2} = 0.00000$

$\left(\frac{\sqrt{N_1}}{N_1+1}\right)^{-3} - R_{-3} = 0.00000$

$\frac{R_4}{R_3} = 0.48864$

$\frac{\sqrt{N_1}}{N_1+1} = 0.48864$

$R_4 = 0.05701$

$R_3 = 0.11667$

$R_2 = 0.23877$

$R_{-1} = 2.04649$

$R_{-2} = 4.18813$

$R_{-3} = 8.57096$

$0R_4 = 0.15929$ cm

$0R_3 = 0.32598$ cm

$0R_2 = 0.66712$ cm

$0R_{-1} = 5.71790$ cm

$0R_{-2} = 11.70162$ cm

$0R_{-3} = 23.94726$ cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.79400 cm

$n_1 = 0.61383$ cm

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Exponential Series

$0R_1 = 2.29073$ cm

$R_1 = 0.81988$

$N_1 = 0.21970$

$$\frac{1}{N_1+1} - R_1 = 0.00000$$

$$\frac{1}{N_1+1}^{4} - R_4 = 0.00000$$

$$\frac{1}{N_1+1}^{3} - R_3 = 0.00000$$

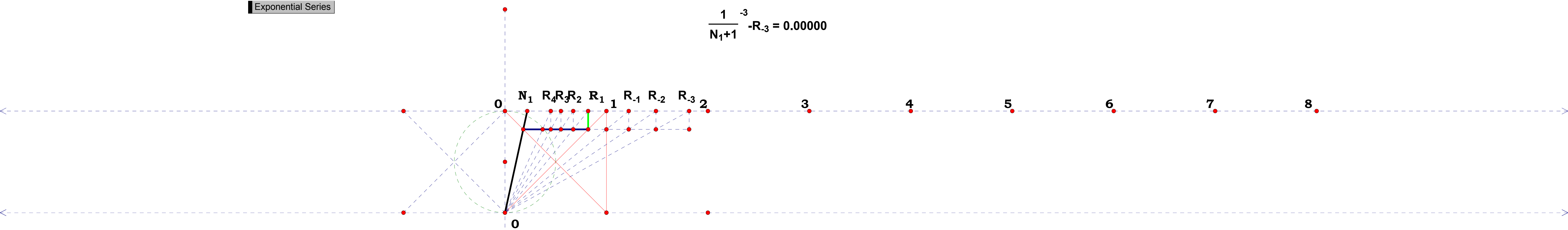
$$\frac{1}{N_1+1}^{2} - R_2 = 0.00000$$

$$\frac{1}{N_1+1}^{1} - R_1 = 0.00000$$

$$\frac{1}{N_1+1}^{-1} - R_{-1} = 0.00000$$

$$\frac{1}{N_1+1}^{-2} - R_{-2} = 0.00000$$

$$\frac{1}{N_1+1}^{-3} - R_{-3} = 0.00000$$



$$\frac{R_4}{R_3} = 0.81988$$

$$\frac{1}{N_1+1} = 0.81988$$

$R_4 = 0.45185$

$R_3 = 0.55112$

$R_2 = 0.67220$

$R_{-1} = 1.21970$

$R_{-2} = 1.48766$

$R_{-3} = 1.81450$

$0R_4 = 1.26246$ cm

$0R_3 = 1.53982$ cm

$0R_2 = 1.87812$ cm

$0R_{-1} = 3.40783$ cm

$0R_{-2} = 4.15652$ cm

$0R_{-3} = 5.06970$ cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.77283 cm

n_1 = 2.06057 cm

Hide Intersections

Hide Objects

Show Lines

Exponential Series

$0R_1$ = 3.73131 cm

R_1 = 1.34567

N_1 = 0.74313

$\frac{1}{N_1} - R_1 = 0.00000$

$\left(\frac{1}{N_1}\right)^{-3} - R_{-3} = 0.00000$

$\left(\frac{1}{N_1}\right)^{-2} - R_{-2} = 0.00000$

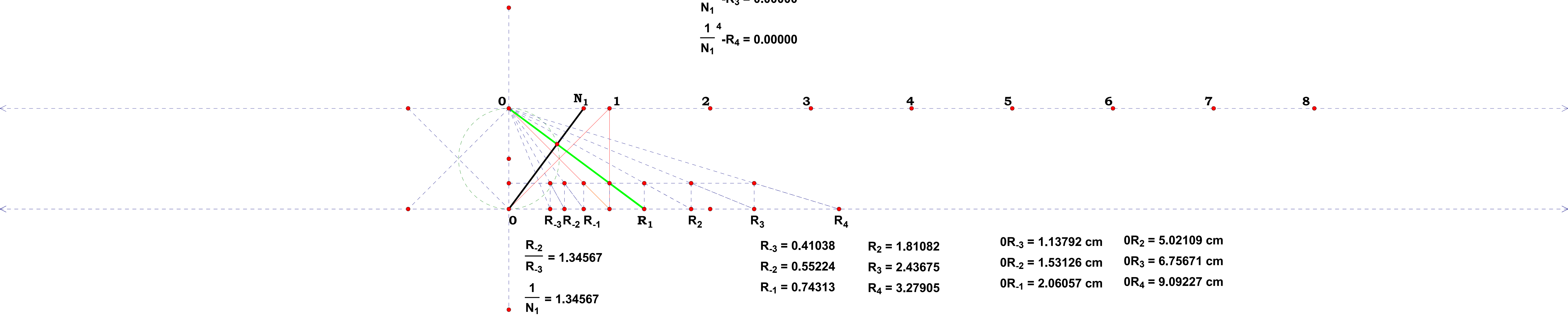
$\left(\frac{1}{N_1}\right)^{-1} - R_{-1} = 0.00000$

$\left(\frac{1}{N_1}\right)^{1} - R_1 = 0.00000$

$\left(\frac{1}{N_1}\right)^{2} - R_2 = 0.00000$

$\left(\frac{1}{N_1}\right)^{3} - R_3 = 0.00000$

$\left(\frac{1}{N_1}\right)^{4} - R_4 = 0.00000$



$\frac{R_{-2}}{R_{-3}} = 1.34567$

$\frac{1}{N_1} = 1.34567$

R_{-3} = 0.41038

R_{-2} = 0.55224

R_{-1} = 0.74313

R_2 = 1.81082

R_3 = 2.43675

R_4 = 3.27905

$0R_{-3}$ = 1.13792 cm

$0R_{-2}$ = 1.53126 cm

$0R_{-1}$ = 2.06057 cm

$0R_2$ = 5.02109 cm

$0R_3$ = 6.75671 cm

$0R_4$ = 9.09227 cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.77283 cm

n_1 = 3.41954 cm

Hide Intersections

Show Lines

Hide Objects

Show Lines

Exponential Series

$0R_1$ = 4.21707 cm

R_1 = 1.52085

N_1 = 1.23323

$N_1^2-R_1$ = 0.00000

$N_1^{2-3}-R_{-3}$ = 0.00000

$N_1^{2-2}-R_{-2}$ = 0.00000

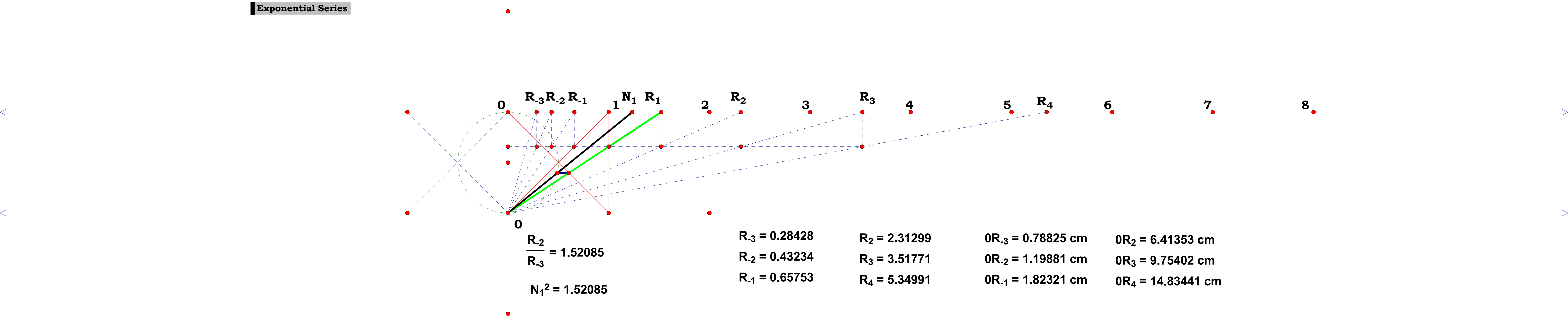
$N_1^{2-1}-R_{-1}$ = 0.00000

$N_1^{21}-R_1$ = 0.00000

$N_1^{22}-R_2$ = 0.00000

$N_1^{23}-R_3$ = 0.00000

$N_1^{24}-R_4$ = 0.00000



$\frac{R_{-2}}{R_{-3}}$ = 1.52085

N_1^2 = 1.52085

R_{-3} = 0.28428

R_{-2} = 0.43234

R_{-1} = 0.65753

R_2 = 2.31299

R_3 = 3.51771

R_4 = 5.34991

$0R_{-3}$ = 0.78825 cm

$0R_{-2}$ = 1.19881 cm

$0R_{-1}$ = 1.82321 cm

$0R_2$ = 6.41353 cm

$0R_3$ = 9.75402 cm

$0R_4$ = 14.83441 cm

Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.77283 cm

n_1 = 4.50850 cm

Hide Intersections
Show Lines
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Base Figure
Exponential Series

$0R_1$ = 2.01185 cm

R_1 = 0.72556

N_1 = 1.62595

$\frac{N_1^2}{N_1^2+1} - R_1 = 0.00000$

$\left(\frac{N_1^2}{N_1^2+1}\right)^4 - R_4 = 0.00000$

$\left(\frac{N_1^2}{N_1^2+1}\right)^3 - R_3 = 0.00000$

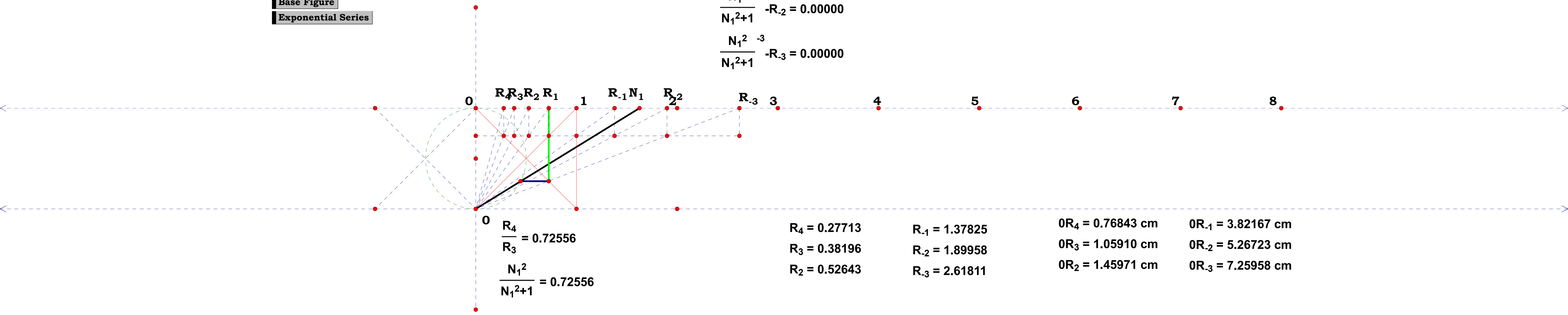
$\left(\frac{N_1^2}{N_1^2+1}\right)^2 - R_2 = 0.00000$

$\left(\frac{N_1^2}{N_1^2+1}\right)^1 - R_1 = 0.00000$

$\left(\frac{N_1^2}{N_1^2+1}\right)^{-1} - R_{-1} = 0.00000$

$\left(\frac{N_1^2}{N_1^2+1}\right)^{-2} - R_{-2} = 0.00000$

$\left(\frac{N_1^2}{N_1^2+1}\right)^{-3} - R_{-3} = 0.00000$



$\frac{R_4}{R_3} = 0.72556$

$\frac{N_1^2}{N_1^2+1} = 0.72556$

R_4 = 0.27713
R_3 = 0.38196
R_2 = 0.52643

R_{-1} = 1.37825
R_{-2} = 1.89958
R_{-3} = 2.61811

$0R_4$ = 0.76843 cm
$0R_3$ = 1.05910 cm
$0R_2$ = 1.45971 cm

$0R_{-1}$ = 3.82167 cm
$0R_{-2}$ = 5.26723 cm
$0R_{-3}$ = 7.25958 cm

Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.77283 cm

n_1 = 2.15900 cm

Hide Intersections
Show Lines
Hide Segments

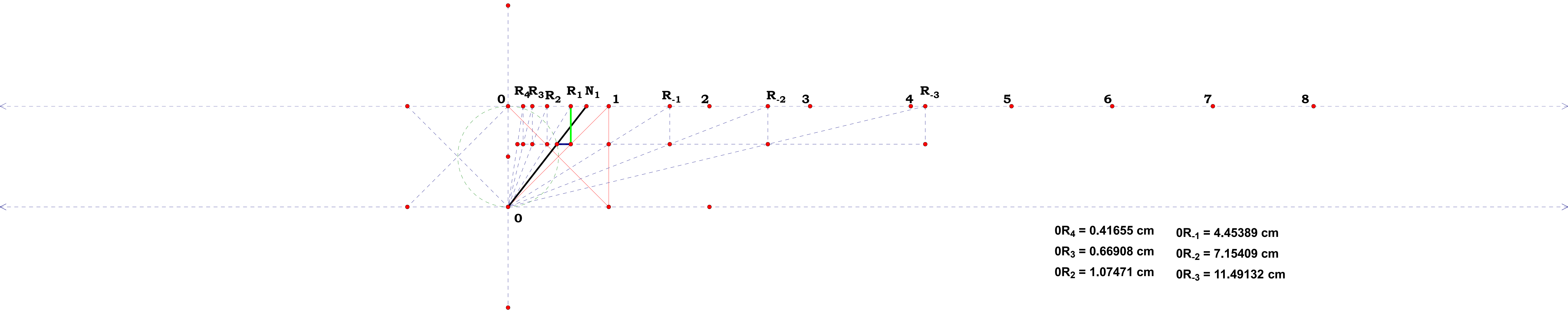
Base Figure

$0R_1$ = 1.72627 cm

R_1 = 0.62256

N_1 = 0.77863

$$\frac{1}{N_1^2+1}-R_1 = 0.00000$$



$0R_4$ = 0.41655 cm
$0R_3$ = 0.66908 cm
$0R_2$ = 1.07471 cm

$0R_{-1}$ = 4.45389 cm
$0R_{-2}$ = 7.15409 cm
$0R_{-3}$ = 11.49132 cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.79400 cm

n_1 = 2.19307 cm

Hide Intersections

Show Lines

Hide Objects

Exponential Series

$0R_1$ = 4.51539 cm

$R_1 = 1.61610$

$N_1 = 0.78492$

$(N_1^2+1)-R_1 = 0.00000$

$(N_1^2+1)^{-3}-R_{-3} = 0.00000$

$(N_1^2+1)^{-2}-R_{-2} = 0.00000$

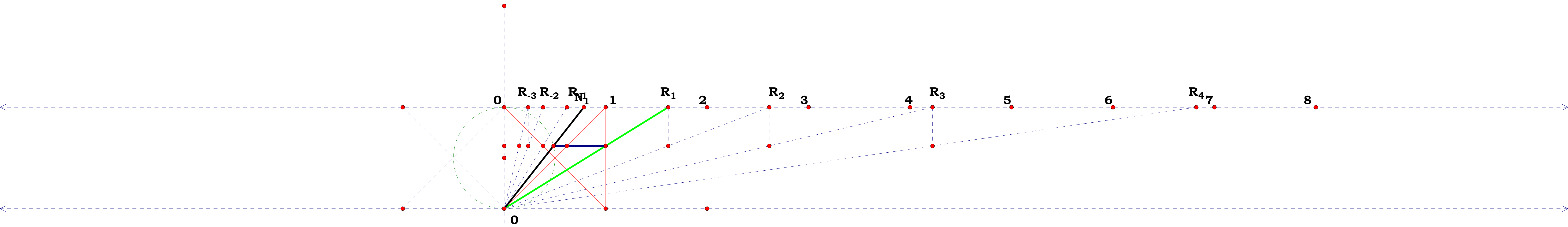
$(N_1^2+1)^{-1}-R_{-1} = 0.00000$

$(N_1^2+1)^{1}-R_{1} = 0.00000$

$(N_1^2+1)^{2}-R_{2} = 0.00000$

$(N_1^2+1)^{3}-R_{3} = 0.00000$

$(N_1^2+1)^{4}-R_{4} = 0.00000$



$$\frac{R_{-2}}{R_{-3}} = 1.61610$$

$N_1^2+1 = 1.61610$

$R_{-3} = 0.23692$

$R_{-2} = 0.38288$

$R_{-1} = 0.61877$

$R_2 = 2.61179$

$R_3 = 4.22092$

$R_4 = 6.82144$

$0R_{-3}$ = 0.66194 cm

$0R_{-2}$ = 1.06976 cm

$0R_{-1}$ = 1.72885 cm

$0R_2$ = 7.29734 cm

$0R_3$ = 11.79325 cm

$0R_4$ = 19.05911 cm

▌Doc N[1]

▌Move N[1] -> 1

▌Move N[1] -> 2

▌Move N[1] -> 3

▌Move N[1] -> 4

▌Move N[1] -> 5

▌Move N[1] -> 6

▌Move N[1] -> 7

▌Move N[1] -> 8

Unit = 2.79400 cm

n_1 = 4.52967 cm

▌Hide Intersections

▌Show Lines

▌Base Figure

▌Hide Segments

▌Exponential Series

$0R_1$ = 3.85703 cm

R_1 = 1.38047

N_1 = 1.62121

$$\frac{N_1^2+1}{N_1^2} - R_1 = 0.00000$$

$${\frac{N_1^2+1}{N_1^2}}^{-3} - R_{-3} = 0.00000$$

$${\frac{N_1^2+1}{N_1^2}}^{-2} - R_{-2} = 0.00000$$

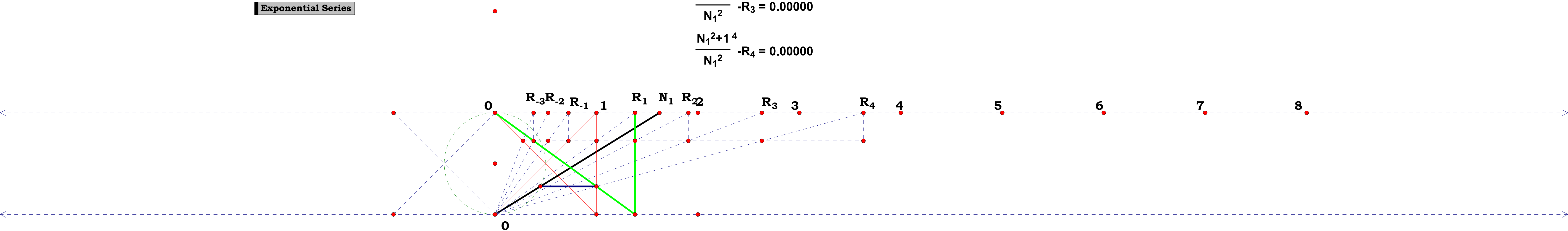
$${\frac{N_1^2+1}{N_1^2}}^{-1} - R_{-1} = 0.00000$$

$${\frac{N_1^2+1}{N_1^2}}^{1} - R_1 = 0.00000$$

$${\frac{N_1^2+1}{N_1^2}}^{2} - R_2 = 0.00000$$

$${\frac{N_1^2+1}{N_1^2}}^{3} - R_3 = 0.00000$$

$${\frac{N_1^2+1}{N_1^2}}^{4} - R_4 = 0.00000$$



$$\frac{R_{-2}}{R_{-3}} = 1.38047$$

$$\frac{N_1^2+1}{N_1^2} = 1.38047$$

R_{-3} = 0.38012

R_{-2} = 0.52474

R_{-1} = 0.72439

R_2 = 1.90570

R_3 = 2.63076

R_4 = 3.63168

$0R_{-3}$ = 1.06205 cm

$0R_{-2}$ = 1.46613 cm

$0R_{-1}$ = 2.02395 cm

$0R_2$ = 5.32452 cm

$0R_3$ = 7.35034 cm

$0R_4$ = 10.14692 cm

Doc N[1]

Move N[1] -> 1

Move N[1] -> 2

Move N[1] -> 3

Move N[1] -> 4

Move N[1] -> 5

Move N[1] -> 6

Move N[1] -> 7

Move N[1] -> 8

Unit = 2.77283 cm

n_1 = 2.35105 cm

Hide Intersections

Show Lines

Hide Objects

Exponential Series

$0R_1$ = 3.85699 cm

R_1 = 1.39099

N_1 = 0.84789

$\frac{1}{N_1^2}-R_1 = 0.00000$

${\frac{1}{N_1^2}}^{-3}-R_{-3} = 0.00000$

${\frac{1}{N_1^2}}^{-2}-R_{-2} = 0.00000$

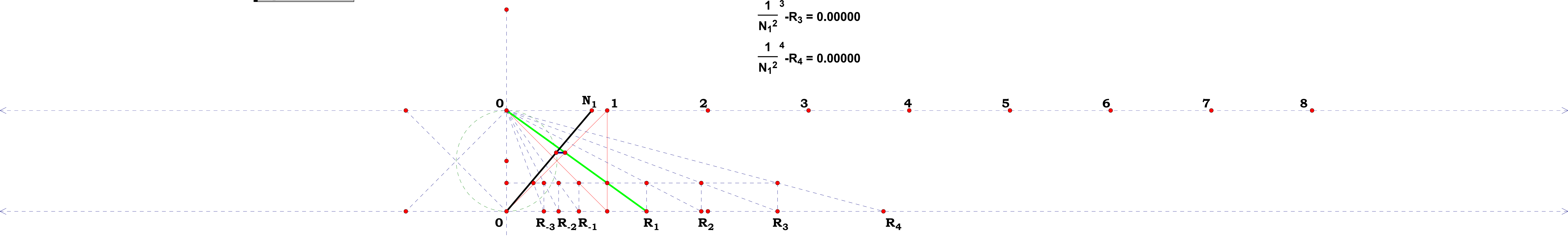
${\frac{1}{N_1^2}}^{-1}-R_{-1} = 0.00000$

${\frac{1}{N_1^2}}^{1}-R_{1} = 0.00000$

${\frac{1}{N_1^2}}^{2}-R_{2} = 0.00000$

${\frac{1}{N_1^2}}^{3}-R_{3} = 0.00000$

${\frac{1}{N_1^2}}^{4}-R_{4} = 0.00000$



$\frac{R_{-2}}{R_{-3}} = 1.39099$

$\frac{1}{N_1^2} = 1.39099$

R_{-3} = 0.37156

R_{-2} = 0.51683

R_{-1} = 0.71891

R_2 = 1.93486

R_3 = 2.69137

R_4 = 3.74367

$0R_{-3}$ = 1.03027 cm

$0R_{-2}$ = 1.43310 cm

$0R_{-1}$ = 1.99342 cm

$0R_2$ = 5.36503 cm

$0R_3$ = 7.46271 cm

$0R_4$ = 10.38056 cm

Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.77283 cm

n_1 = 3.26122 cm

Show Lines
Hide Segments
Base Figure
Exponential Series

$0R_1$ = 1.36837 cm
R_1 = 0.49349

N_1 = 1.17613

$\frac{N_1}{N_1^2+1} - R_1 = 0.00000$

$\left(\frac{N_1}{N_1^2+1}\right)^4 - R_4 = 0.00000$

$\left(\frac{N_1}{N_1^2+1}\right)^3 - R_3 = 0.00000$

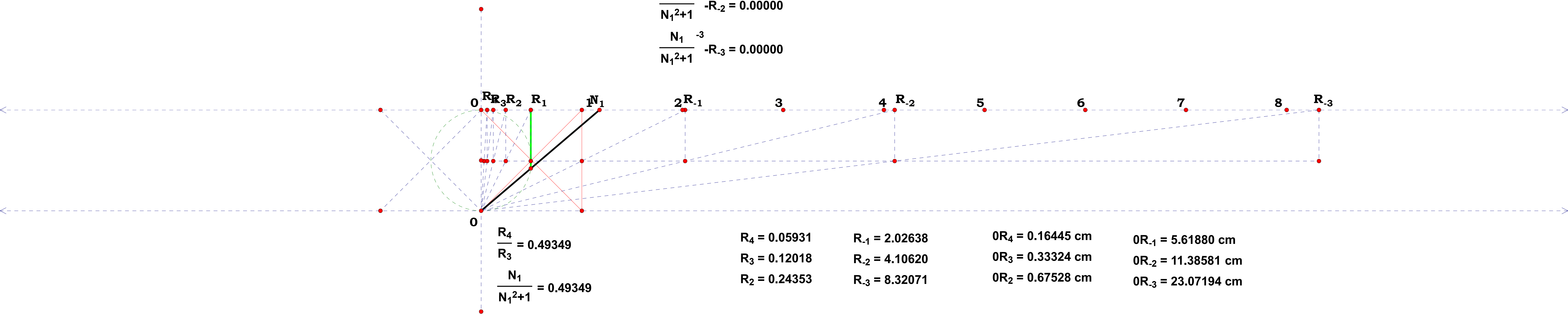
$\left(\frac{N_1}{N_1^2+1}\right)^2 - R_2 = 0.00000$

$\left(\frac{N_1}{N_1^2+1}\right)^1 - R_1 = 0.00000$

$\left(\frac{N_1}{N_1^2+1}\right)^{-1} - R_{-1} = 0.00000$

$\left(\frac{N_1}{N_1^2+1}\right)^{-2} - R_{-2} = 0.00000$

$\left(\frac{N_1}{N_1^2+1}\right)^{-3} - R_{-3} = 0.00000$



$\frac{R_4}{R_3} = 0.49349$

$\frac{N_1}{N_1^2+1} = 0.49349$

R_4 = 0.05931
R_3 = 0.12018
R_2 = 0.24353

R_{-1} = 2.02638
R_{-2} = 4.10620
R_{-3} = 8.32071

$0R_4$ = 0.16445 cm
$0R_3$ = 0.33324 cm
$0R_2$ = 0.67528 cm

$0R_{-1}$ = 5.61880 cm
$0R_{-2}$ = 11.38581 cm
$0R_{-3}$ = 23.07194 cm

Doc N[1]
Move N[1] -> 1
Move N[1] -> 2
Move N[1] -> 3
Move N[1] -> 4
Move N[1] -> 5
Move N[1] -> 6
Move N[1] -> 7
Move N[1] -> 8

Unit = 2.79400 cm

n_1 = 4.21217 cm

Hide Intersections
Hide Objects
Hide Segments
Show Lines
Base Figure
Exponential Series

$0R_1 = 1.85331$ cm

$R_1 = 0.66332$

$N_1 = 1.50758$

$\frac{1}{N_1} - R_1 = 0.00000$

$\left(\frac{1}{N_1}\right)^{4} - R_4 = 0.00000$

$\left(\frac{1}{N_1}\right)^{3} - R_3 = 0.00000$

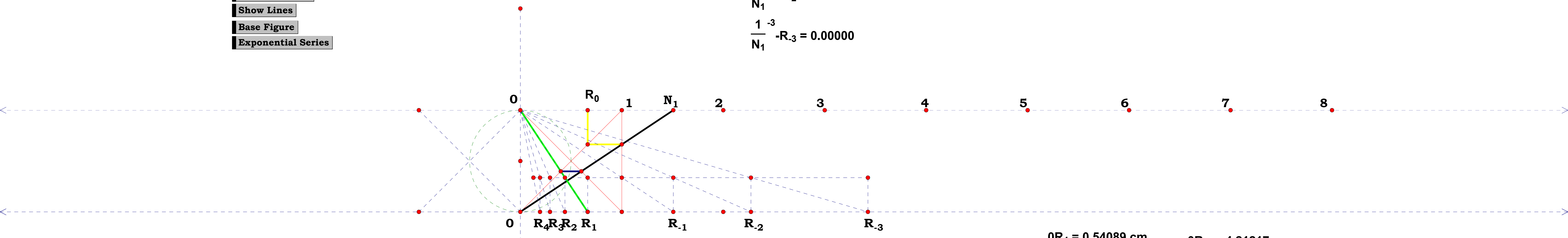
$\left(\frac{1}{N_1}\right)^{2} - R_2 = 0.00000$

$\left(\frac{1}{N_1}\right)^{1} - R_1 = 0.00000$

$\left(\frac{1}{N_1}\right)^{-1} - R_{-1} = 0.00000$

$\left(\frac{1}{N_1}\right)^{-2} - R_{-2} = 0.00000$

$\left(\frac{1}{N_1}\right)^{-3} - R_{-3} = 0.00000$



$\frac{R_4}{R_3} = 0.66332$

$\frac{1}{N_1} = 0.66332$

$R_4 = 0.19359$

$R_3 = 0.29185$

$R_2 = 0.43999$

$R_{-1} = 1.50758$

$R_{-2} = 2.27278$

$R_{-3} = 3.42640$

$0R_4 = 0.54089$ cm

$0R_3 = 0.81543$ cm

$0R_2 = 1.22933$ cm

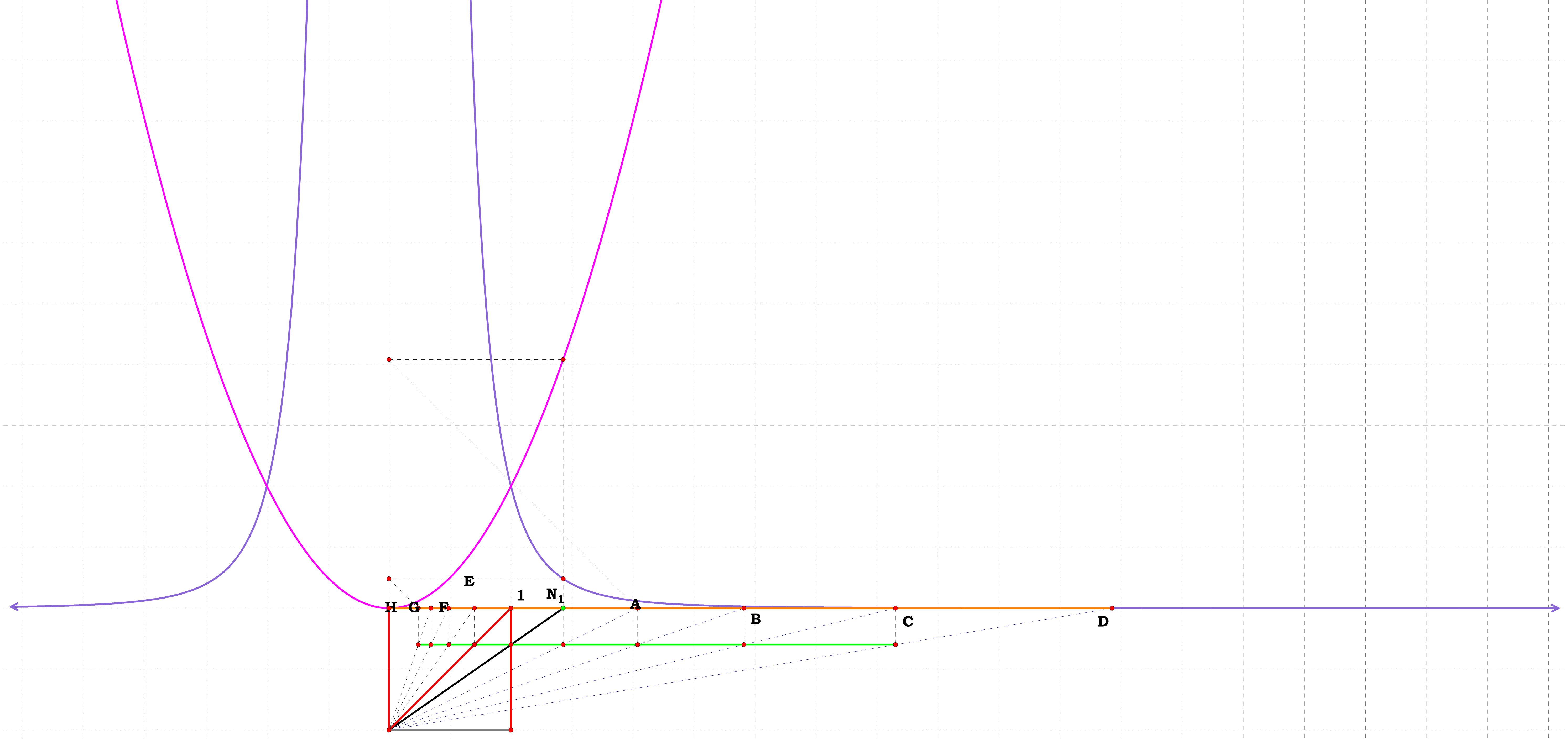
$0R_{-1} = 4.21217$ cm

$0R_{-2} = 6.35016$ cm

$0R_{-3} = 9.57335$ cm

Exponential Series Notebook 1

Zero from bottom.



$N_1 = 1.42736$

$A = 2.03735$

$B = 2.90803$

$C = 4.15079$

$D = 5.92467$

$E = 0.70060$

$F = 0.49083$

$G = 0.34388$

$H = 0.24092$

$N_1^2 - A = 0.00000$

$N_1^3 - B = 0.00000$

$N_1^4 - C = 0.00000$

$N_1^5 - D = 0.00000$

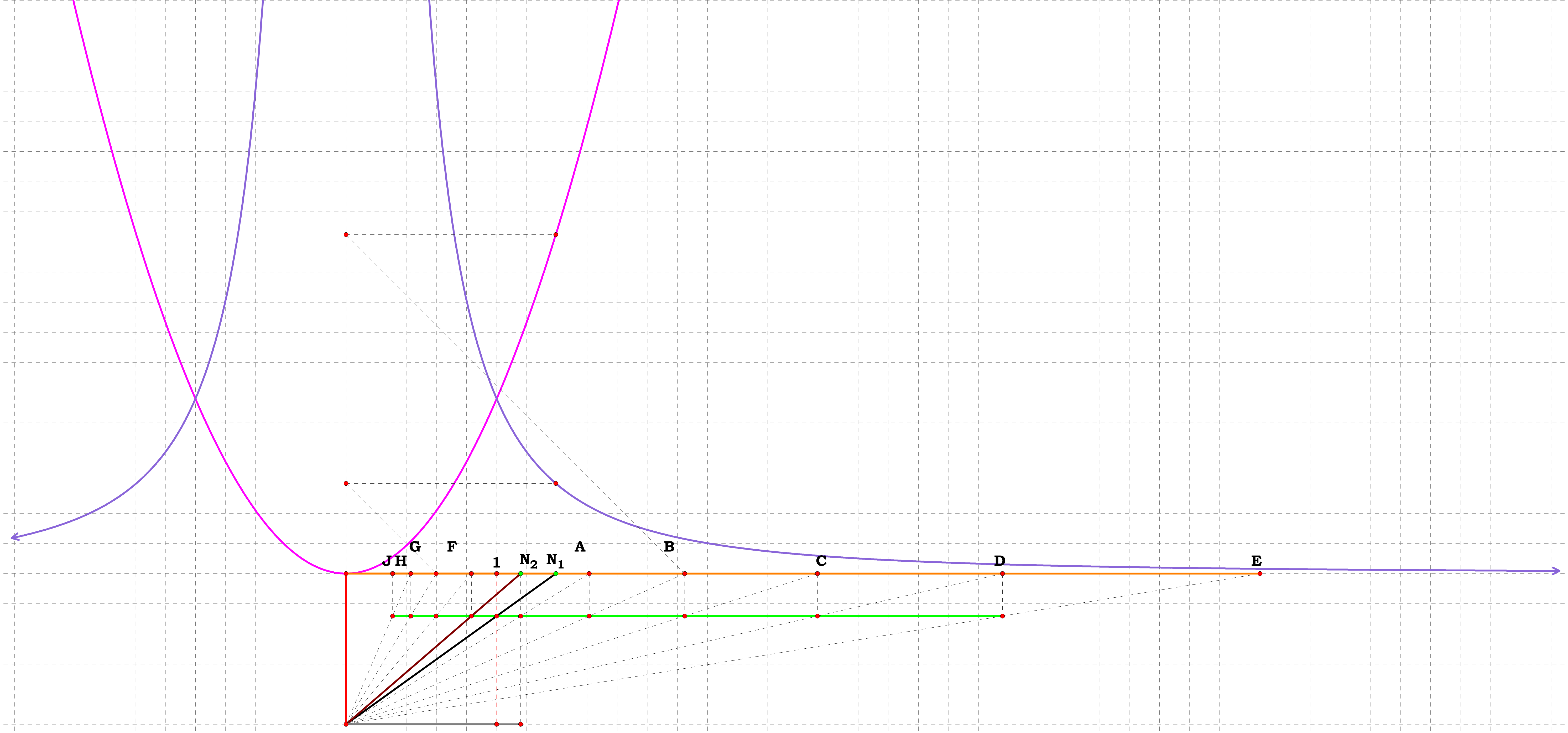
$N_1^{-1} - E = 0.00000$

$N_1^{-2} - F = 0.00000$

$N_1^{-3} - G = 0.00000$

$N_1^{-4} - H = 0.00000$

Plate 1



N_1 = 1.39234

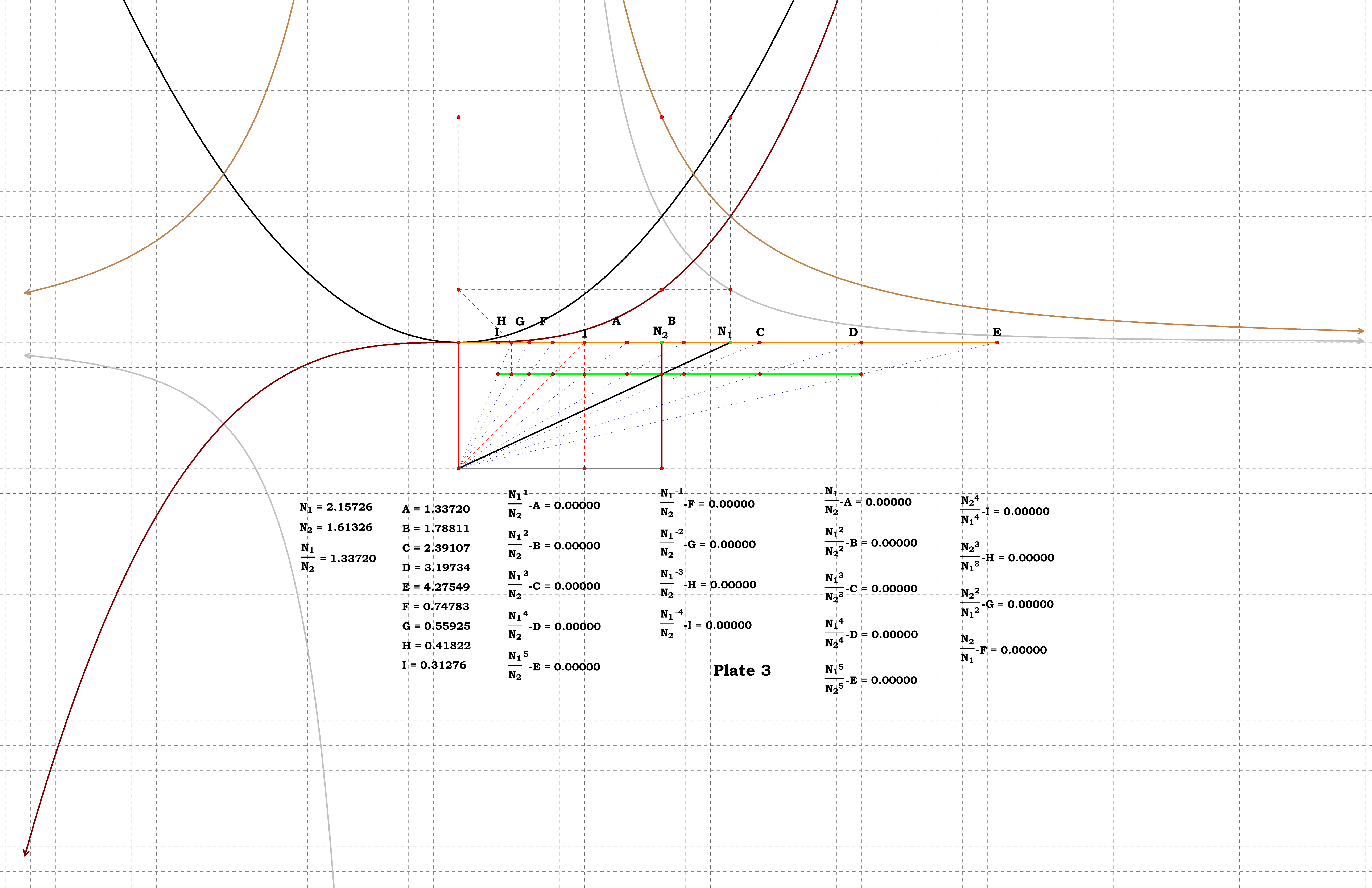
N_2 = 1.15968

A = 1.61466
B = 2.24815
C = 3.13018
D = 4.35827
E = 6.06818
F = 0.83290
G = 0.59820
H = 0.42964
J = 0.30857

$N_2 \cdot N_1^{1} - A = 0.00000$
$N_2 \cdot N_1^{2} - B = 0.00000$
$N_2 \cdot N_1^{3} - C = 0.00000$
$N_2 \cdot N_1^{4} - D = 0.00000$
$N_2 \cdot N_1^{5} - E = 0.00000$

$N_2 \cdot N_1^{-1} - F = 0.00000$
$N_2 \cdot N_1^{-2} - G = 0.00000$
$N_2 \cdot N_1^{-3} - H = 0.00000$
$N_2 \cdot N_1^{-4} - J = 0.00000$

Plate 2



$N_1 = 2.15726$

$N_2 = 1.61326$

$\frac{N_1}{N_2} = 1.33720$

A = 1.33720

B = 1.78811

C = 2.39107

D = 3.19734

E = 4.27549

F = 0.74783

G = 0.55925

H = 0.41822

I = 0.31276

$\frac{N_1^{1}}{N_2} - A = 0.00000$

$\frac{N_1^{2}}{N_2} - B = 0.00000$

$\frac{N_1^{3}}{N_2} - C = 0.00000$

$\frac{N_1^{4}}{N_2} - D = 0.00000$

$\frac{N_1^{5}}{N_2} - E = 0.00000$

$\frac{N_1^{-1}}{N_2} - F = 0.00000$

$\frac{N_1^{-2}}{N_2} - G = 0.00000$

$\frac{N_1^{-3}}{N_2} - H = 0.00000$

$\frac{N_1^{-4}}{N_2} - I = 0.00000$

$\frac{N_1}{N_2} - A = 0.00000$

$\frac{N_1^2}{N_2^2} - B = 0.00000$

$\frac{N_1^3}{N_2^3} - C = 0.00000$

$\frac{N_1^4}{N_2^4} - D = 0.00000$

$\frac{N_1^5}{N_2^5} - E = 0.00000$

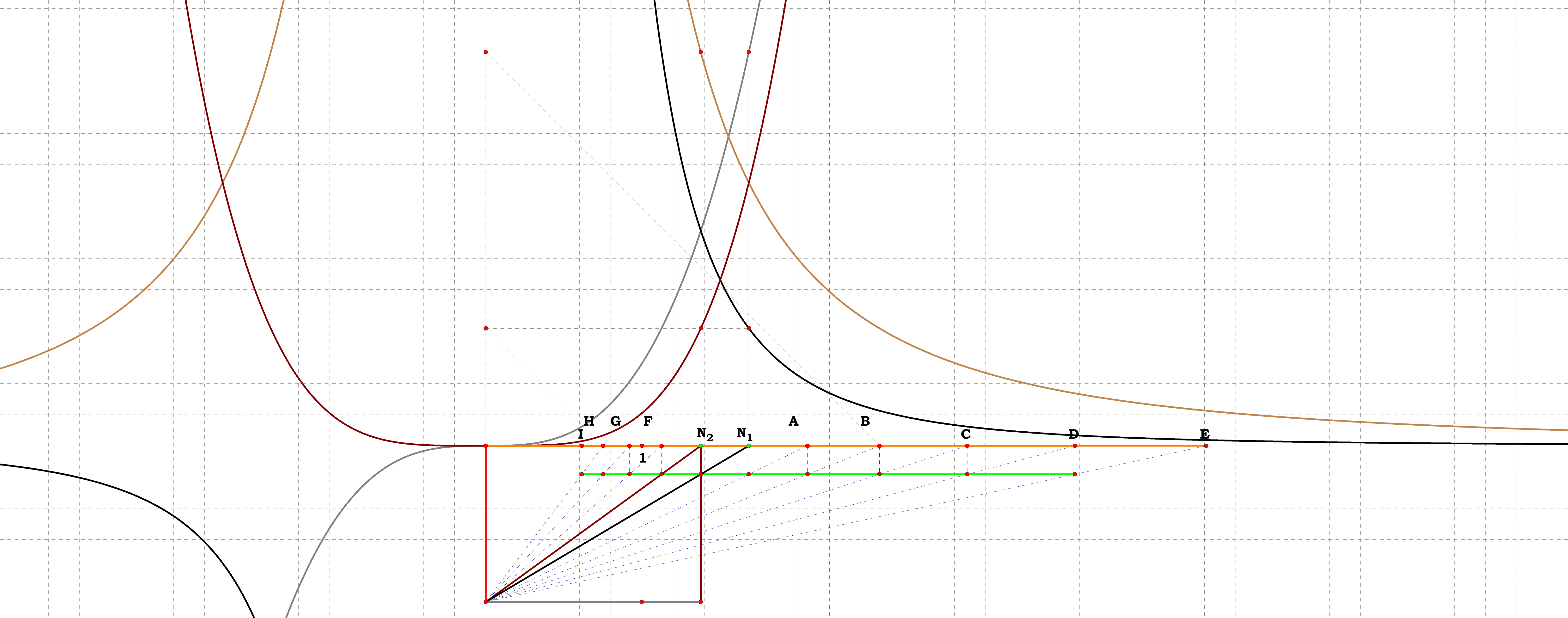
$\frac{N_2^4}{N_1^4} - I = 0.00000$

$\frac{N_2^3}{N_1^3} - H = 0.00000$

$\frac{N_2^2}{N_1^2} - G = 0.00000$

$\frac{N_2}{N_1} - F = 0.00000$

Plate 3



$N_1 = 1.68394$

$N_2 = 1.37660$

$\frac{N_1}{N_2} = 1.22326$

A = 2.05989
B = 2.51977
C = 3.08233
D = 3.77048
E = 4.61226
F = 1.12536
G = 0.91997
H = 0.75207
I = 0.61481

$N_1\cdot\frac{N_1}{N_2}^{1}-A = 0.00000$

$N_1\cdot\frac{N_1}{N_2}^{2}-B = 0.00000$

$N_1\cdot\frac{N_1}{N_2}^{3}-C = 0.00000$

$N_1\cdot\frac{N_1}{N_2}^{4}-D = 0.00000$

$N_1\cdot\frac{N_1}{N_2}^{5}-E = 0.00000$

$N_1\cdot\frac{N_1}{N_2}^{-1}-N_2 = 0.00000$

$N_1\cdot\frac{N_1}{N_2}^{-2}-F = 0.00000$

$N_1\cdot\frac{N_1}{N_2}^{-3}-G = 0.00000$

$N_1\cdot\frac{N_1}{N_2}^{-4}-H = 0.00000$

$N_1\cdot\frac{N_1}{N_2}^{-5}-I = 0.00000$

$\frac{N_1^2}{N_2}-A = 0.00000$

$\frac{N_1^3}{N_2^2}-B = 0.00000$

$\frac{N_1^4}{N_2^3}-C = 0.00000$

$\frac{N_1^5}{N_2^4}-D = 0.00000$

$\frac{N_1^6}{N_2^5}-E = 0.00000$

$\frac{N_2^5}{N_1^4}-I = 0.00000$

$\frac{N_2^4}{N_1^3}-H = 0.00000$

$\frac{N_2^3}{N_1^2}-G = 0.00000$

$\frac{N_2^2}{N_1}-F = 0.00000$

Plate 4

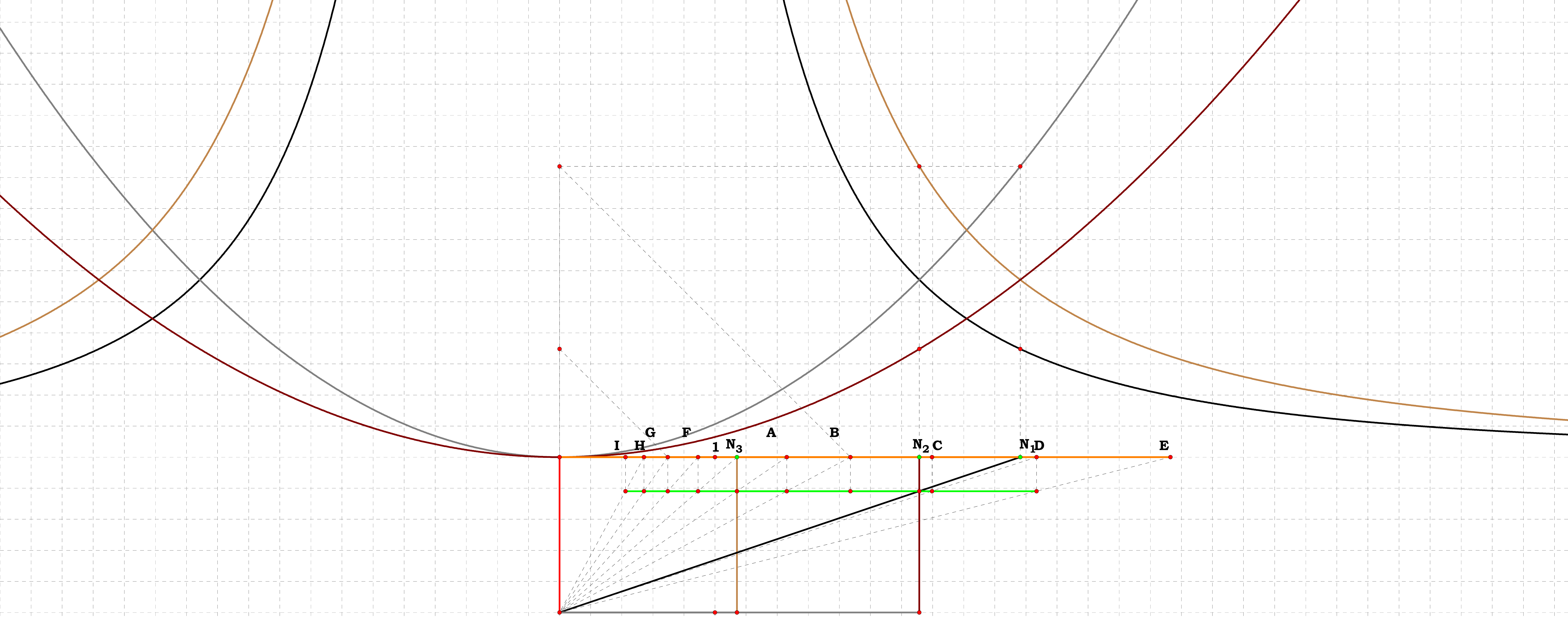


Plate 5

$N_1 = 2.96382$

$N_2 = 2.31441$

$N_3 = 1.14115$

$\frac{N_1}{N_2} = 1.28059$

A = 1.46135
B = 1.87140
C = 2.39649
D = 3.06893
E = 3.93005
F = 0.89111
G = 0.69586
H = 0.54339
I = 0.42433

$N_3 \cdot \frac{N_1^{\,1}}{N_2} - A = 0.00000$

$N_3 \cdot \frac{N_1^{\,2}}{N_2} - B = 0.00000$

$N_3 \cdot \frac{N_1^{\,3}}{N_2} - C = 0.00000$

$N_3 \cdot \frac{N_1^{\,4}}{N_2} - D = 0.00000$

$N_3 \cdot \frac{N_1^{\,5}}{N_2} - E = 0.00000$

$N_3 \cdot \frac{N_1^{\,-1}}{N_2} - F = 0.00000$

$N_3 \cdot \frac{N_1^{\,-2}}{N_2} - G = 0.00000$

$N_3 \cdot \frac{N_1^{\,-3}}{N_2} - H = 0.00000$

$N_3 \cdot \frac{N_1^{\,-4}}{N_2} - I = 0.00000$

$\frac{N_1 \cdot N_3}{N_2} - A = 0.00000$

$\frac{N_1^2 \cdot N_3}{N_2^2} - B = 0.00000$

$\frac{N_1^3 \cdot N_3}{N_2^3} - C = 0.00000$

$\frac{N_1^4 \cdot N_3}{N_2^4} - D = 0.00000$

$\frac{N_1^5 \cdot N_3}{N_2^5} - E = 0.00000$

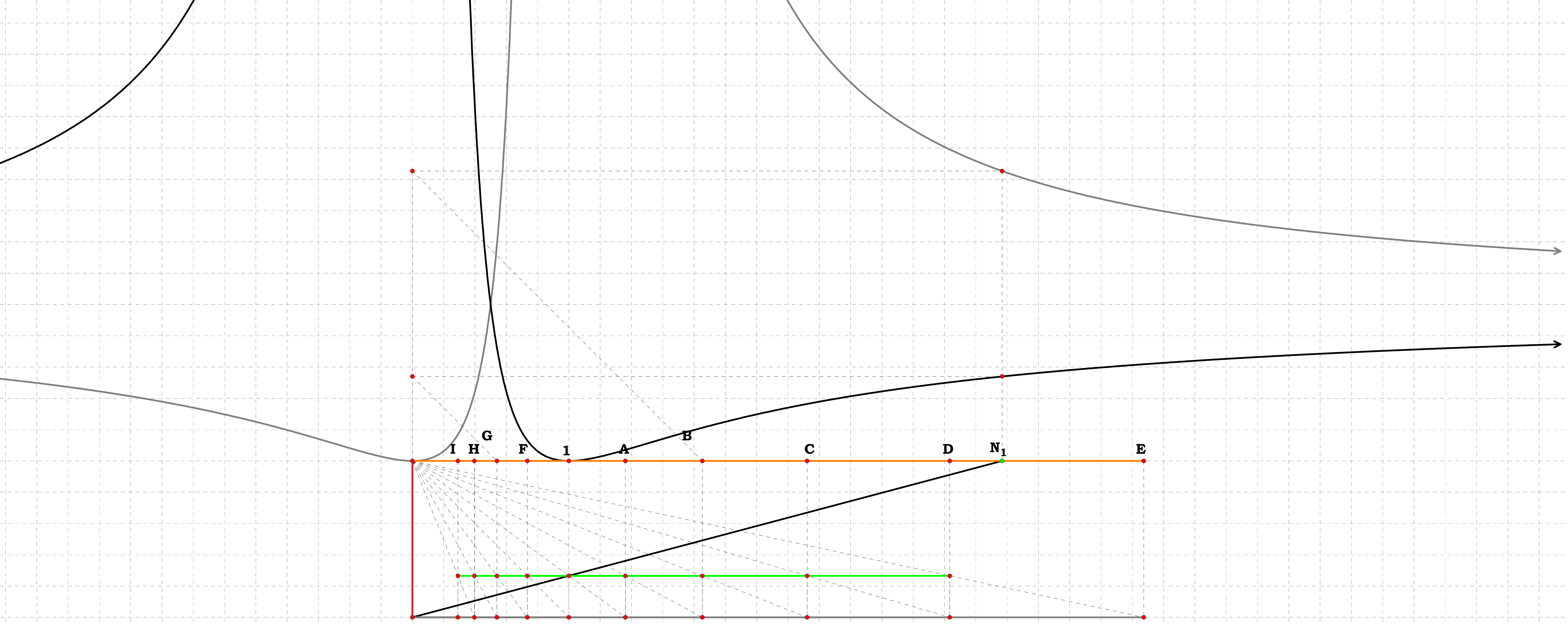
$\frac{N_2^4 \cdot N_3}{N_1^4} - I = 0.00000$

$\frac{N_2^3 \cdot N_3}{N_1^3} - H = 0.00000$

$\frac{N_2^2 \cdot N_3}{N_1^2} - G = 0.00000$

$\frac{N_2 \cdot N_3}{N_1} - F = 0.00000$

Zero from top.



$N_1 = 3.76827$

$\frac{N_1}{N_1-1} = 1.36124$

A = 1.36124
B = 1.85297
C = 2.52232
D = 3.43348
E = 4.67378
F = 0.73463
G = 0.53968
H = 0.39646
I = 0.29125

${\frac{N_1}{N_1-1}}^{1}-A = 0.00000$

${\frac{N_1}{N_1-1}}^{2}-B = 0.00000$

${\frac{N_1}{N_1-1}}^{3}-C = 0.00000$

${\frac{N_1}{N_1-1}}^{4}-D = 0.00000$

${\frac{N_1}{N_1-1}}^{5}-E = 0.00000$

${\frac{N_1}{N_1-1}}^{-1}-F = 0.00000$

${\frac{N_1}{N_1-1}}^{-2}-G = 0.00000$

${\frac{N_1}{N_1-1}}^{-3}-H = 0.00000$

${\frac{N_1}{N_1-1}}^{-4}-I = 0.00000$

Plate 6

$\frac{N_1}{N_1-1}-A = 0.00000$

$\frac{N_1^2}{(N_1^2-2\cdot N_1)+1}-B = 0.00000$

$\frac{N_1^3}{((N_1^3-3\cdot N_1^2)+3\cdot N_1)-1}-C = 0.00000$

$\frac{N_1^4}{(((N_1^4-4\cdot N_1^3)+6\cdot N_1^2)-4\cdot N_1)+1}-D = 0.00000$

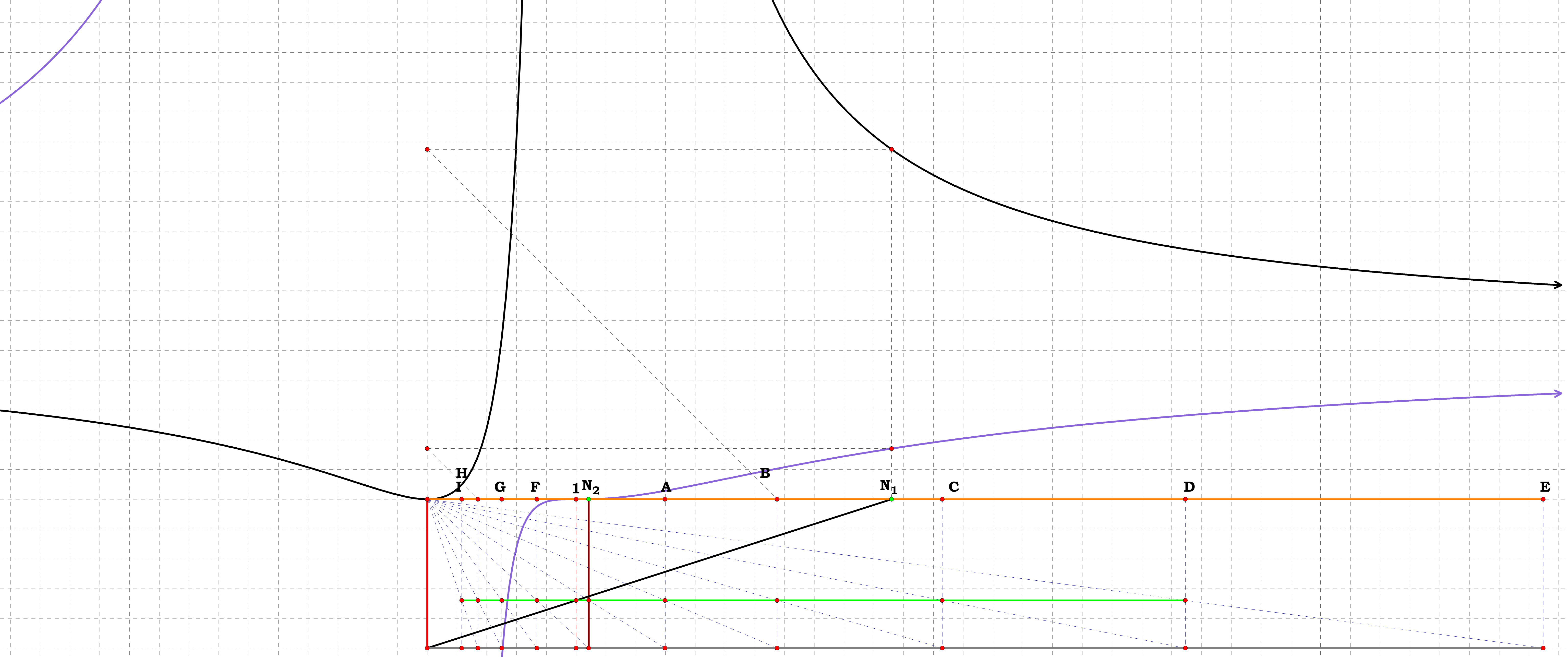
$\frac{N_1^5}{((((N_1^5-5\cdot N_1^4)+10\cdot N_1^3)-10\cdot N_1^2)+5\cdot N_1)-1}-E = 0.00000$

$\frac{(((N_1^4-4\cdot N_1^3)+6\cdot N_1^2)-4\cdot N_1)+1}{N_1^4}-I = 0.00000$

$\frac{((N_1^3-3\cdot N_1^2)+3\cdot N_1)-1}{N_1^3}-H = 0.00000$

$\frac{(N_1^2-2\cdot N_1)+1}{N_1^2}-G = 0.00000$

$\frac{N_1-1}{N_1}-F = 0.00000$



$N_1 = 3.11876$

$N_2 = 1.08464$

$\frac{N_1}{N_1-1} = 1.47197$

A = 1.59656
B = 2.35009
C = 3.45928
D = 5.09196
E = 7.49523
F = 0.73686
G = 0.50059
H = 0.34008
I = 0.23104

$N_2\cdot\frac{N_1}{N_1-1}^{1}-A = 0.00000$

$N_2\cdot\frac{N_1}{N_1-1}^{2}-B = 0.00000$

$N_2\cdot\frac{N_1}{N_1-1}^{3}-C = 0.00000$

$N_2\cdot\frac{N_1}{N_1-1}^{4}-D = 0.00000$

$N_2\cdot\frac{N_1}{N_1-1}^{5}-E = 0.00000$

$N_2\cdot\frac{N_1}{N_1-1}^{-1}-F = 0.00000$

$N_2\cdot\frac{N_1}{N_1-1}^{-2}-G = 0.00000$

$N_2\cdot\frac{N_1}{N_1-1}^{-3}-H = 0.00000$

$N_2\cdot\frac{N_1}{N_1-1}^{-4}-I = 0.00000$

$\frac{N_1\cdot N_2}{N_1-1}-A = 0.00000$

$\frac{N_1^2\cdot N_2}{(N_1^2-2\cdot N_1)+1}-B = 0.00000$

$\frac{N_1^3\cdot N_2}{((N_1^3-3\cdot N_1^2)+3\cdot N_1)-1}-C = 0.00000$

$\frac{N_1^4\cdot N_2}{(((N_1^4-4\cdot N_1^3)+6\cdot N_1^2)-4\cdot N_1)+1}-D = 0.00000$

$\frac{N_1^5\cdot N_2}{((((N_1^5-5\cdot N_1^4)+10\cdot N_1^3)-10\cdot N_1^2)+5\cdot N_1)-1}-E = 0.00000$

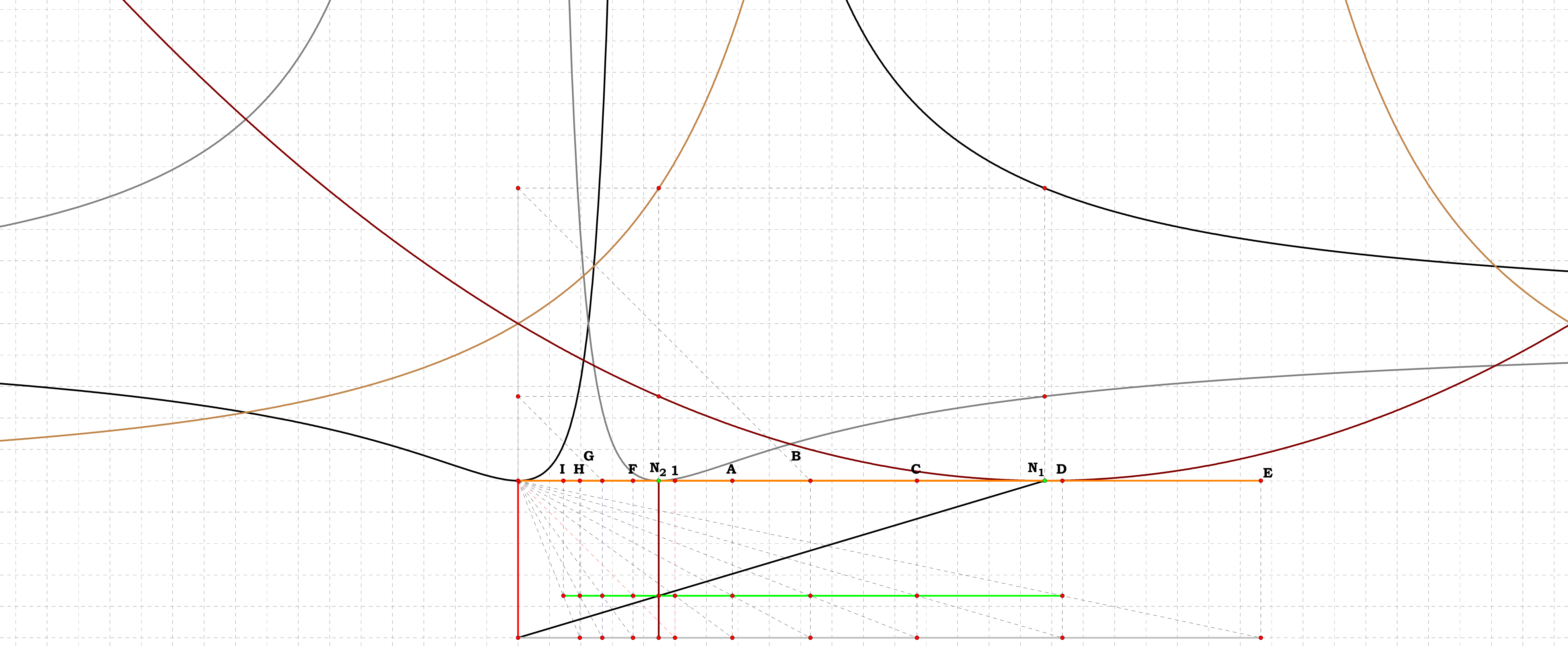
$\frac{(((N_1^4\cdot N_2-4\cdot N_1^3\cdot N_2)+6\cdot N_1^2\cdot N_2)-4\cdot N_1\cdot N_2)+N_2}{N_1^4}-I = 0.00000$

$\frac{((N_1^3\cdot N_2-3\cdot N_1^2\cdot N_2)+3\cdot N_1\cdot N_2)-N_2}{N_1^3}-H = 0.00000$

$\frac{(N_1^2\cdot N_2-2\cdot N_1\cdot N_2)+N_2}{N_1^2}-G = 0.00000$

$\frac{N_1\cdot N_2-N_2}{N_1}-F = 0.00000$

Plate 7



$N_1 = 3.35471$

$N_2 = 0.89626$

$\frac{N_1}{N_1 - N_2} = 1.36456$

A = 1.36456
B = 1.86204
C = 2.54087
D = 3.46718
E = 4.73120
F = 0.73283
G = 0.53705
H = 0.39357
I = 0.28842

$\left(\frac{N_1}{N_1 - N_2}\right)^{1} - A = 0.00000$

$\left(\frac{N_1}{N_1 - N_2}\right)^{2} - B = 0.00000$

$\left(\frac{N_1}{N_1 - N_2}\right)^{3} - C = 0.00000$

$\left(\frac{N_1}{N_1 - N_2}\right)^{4} - D = 0.00000$

$\left(\frac{N_1}{N_1 - N_2}\right)^{5} - E = 0.00000$

$\left(\frac{N_1}{N_1 - N_2}\right)^{-1} - F = 0.00000$

$\left(\frac{N_1}{N_1 - N_2}\right)^{-2} - G = 0.00000$

$\left(\frac{N_1}{N_1 - N_2}\right)^{-3} - H = 0.00000$

$\left(\frac{N_1}{N_1 - N_2}\right)^{-4} - I = 0.00000$

Plate 8

$\frac{N_1}{N_1 - N_2} - A = 0.00000$

$\frac{N_1^2}{(N_1^2 - 2 \cdot N_1 \cdot N_2) + N_2^2} - B = 0.00000$

$\frac{N_1^3}{((N_1^3 - 3 \cdot N_1^2 \cdot N_2) + 3 \cdot N_1 \cdot N_2^2) - N_2^3} - C = 0.00000$

$\frac{N_1^4}{(((N_1^4 - 4 \cdot N_1^3 \cdot N_2) + 6 \cdot N_1^2 \cdot N_2^2) - 4 \cdot N_1 \cdot N_2^3) + N_2^4} - D = 0.00000$

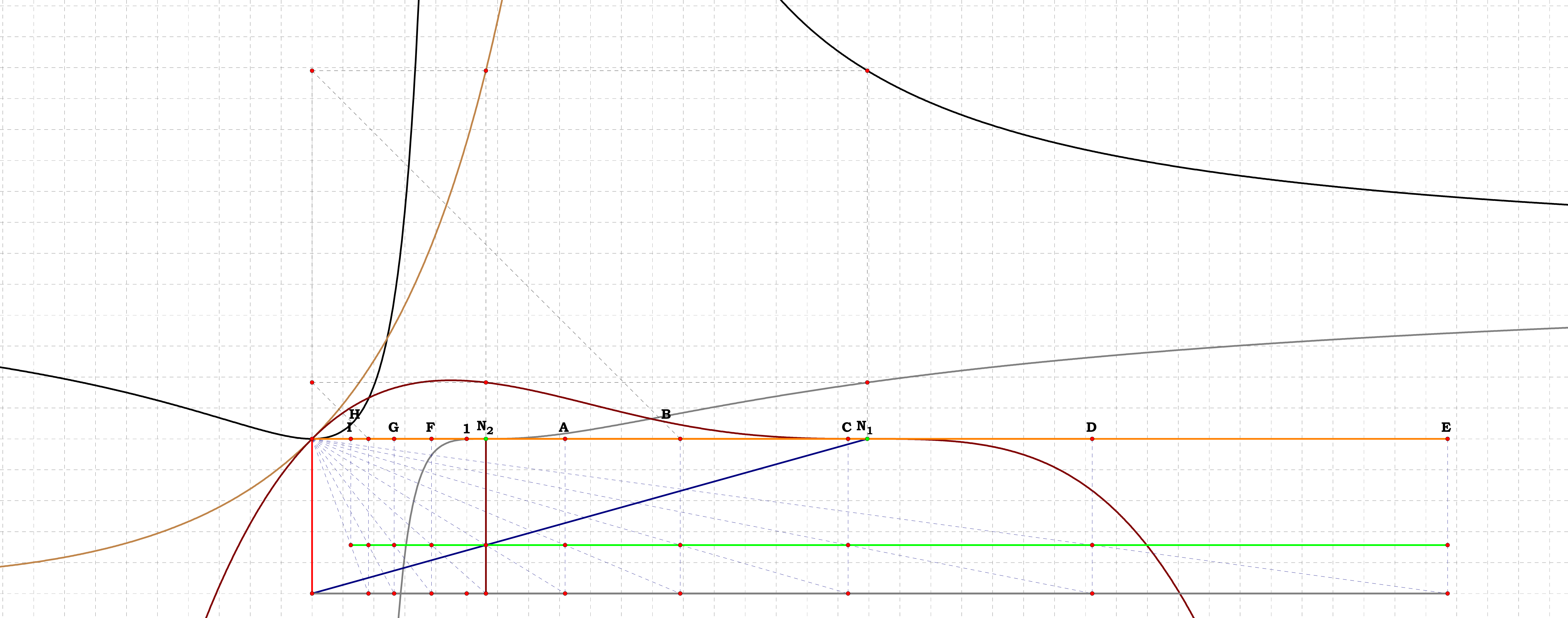
$\frac{N_1^5}{((((N_1^5 - 5 \cdot N_1^4 \cdot N_2) + 10 \cdot N_1^3 \cdot N_2^2) - 10 \cdot N_1^2 \cdot N_2^3) + 5 \cdot N_1 \cdot N_2^4) - N_2^5} - E = 0.00000$

$\frac{(((N_1^4 - 4 \cdot N_1^3 \cdot N_2) + 6 \cdot N_1^2 \cdot N_2^2) - 4 \cdot N_1 \cdot N_2^3) + N_2^4}{N_1^4} - I = 0.00000$

$\frac{((N_1^3 - 3 \cdot N_1^2 \cdot N_2) + 3 \cdot N_1 \cdot N_2^2) - N_2^3}{N_1^3} - H = 0.00000$

$\frac{(N_1^2 - 2 \cdot N_1 \cdot N_2) + N_2^2}{N_1^2} - G = 0.00000$

$\frac{N_1 - N_2}{N_1} - F = 0.00000$



$N_1 = 3.58991$

$N_2 = 1.12360$

$\frac{N_1}{N_1-N_2} = 1.45558$

A = 1.63549

B = 2.38058

C = 3.46513

D = 5.04377

E = 7.34160

F = 0.77193

G = 0.53032

H = 0.36434

I = 0.25030

$N_2 \cdot \frac{N_1}{N_1-N_2}^{1} - A = 0.00000$

$N_2 \cdot \frac{N_1}{N_1-N_2}^{2} - B = 0.00000$

$N_2 \cdot \frac{N_1}{N_1-N_2}^{3} - C = 0.00000$

$N_2 \cdot \frac{N_1}{N_1-N_2}^{4} - D = 0.00000$

$N_2 \cdot \frac{N_1}{N_1-N_2}^{5} - E = 0.00000$

$N_2 \cdot \frac{N_1}{N_1-N_2}^{-1} - F = 0.00000$

$N_2 \cdot \frac{N_1}{N_1-N_2}^{-2} - G = 0.00000$

$N_2 \cdot \frac{N_1}{N_1-N_2}^{-3} - H = 0.00000$

$N_2 \cdot \frac{N_1}{N_1-N_2}^{-4} - I = 0.00000$

Plate 9

$$\frac{N_1 \cdot N_2}{N_1-N_2} - A = 0.00000$$

$$\frac{N_1{}^2 \cdot N_2}{(N_1{}^2-2 \cdot N_1 \cdot N_2)+N_2{}^2} - B = 0.00000$$

$$\frac{N_1{}^3 \cdot N_2}{((N_1{}^3-3 \cdot N_1{}^2 \cdot N_2)+3 \cdot N_1 \cdot N_2{}^2)-N_2{}^3} - C = 0.00000$$

$$\frac{N_1{}^4 \cdot N_2}{(((N_1{}^4-4 \cdot N_1{}^3 \cdot N_2)+6 \cdot N_1{}^2 \cdot N_2{}^2)-4 \cdot N_1 \cdot N_2{}^3)+N_2{}^4} - D = 0.00000$$

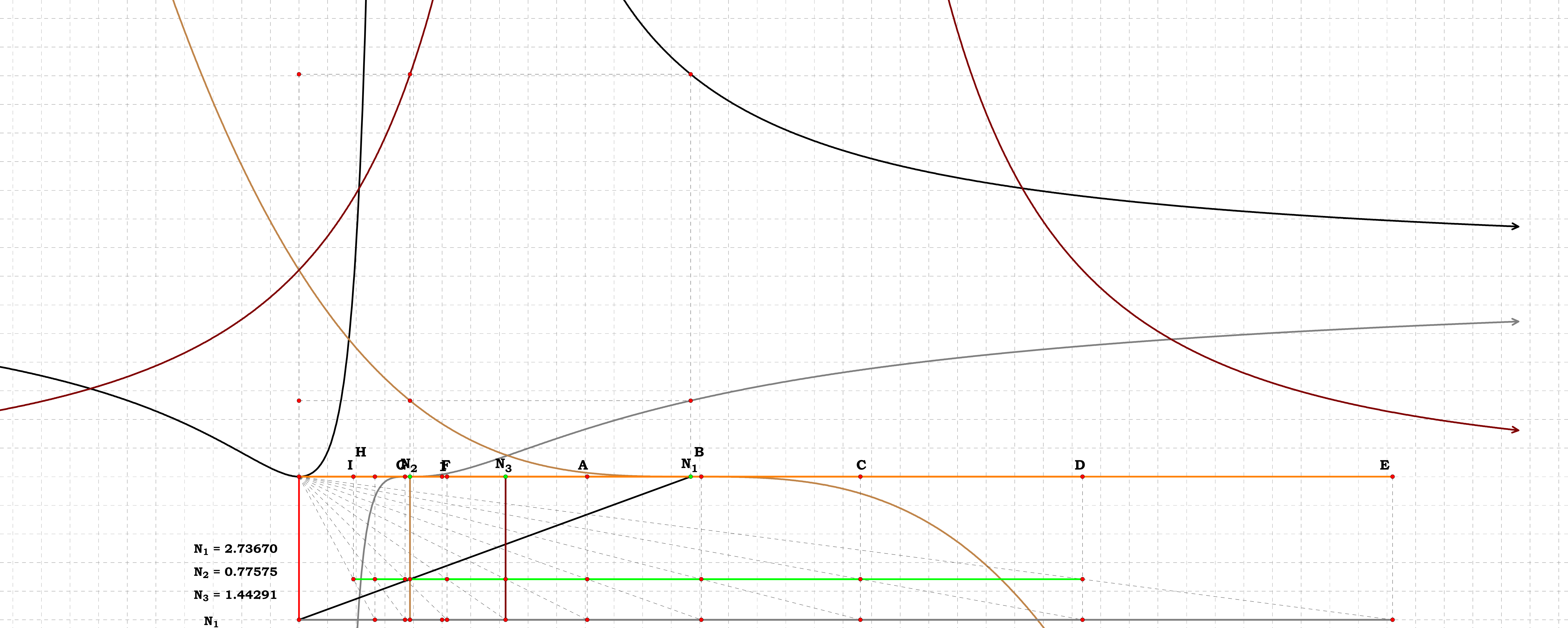
$$\frac{N_1{}^5 \cdot N_2}{((((N_1{}^5-5 \cdot N_1{}^4 \cdot N_2)+10 \cdot N_1{}^3 \cdot N_2{}^2)-10 \cdot N_1{}^2 \cdot N_2{}^3)+5 \cdot N_1 \cdot N_2{}^4)-N_2{}^5} - E = 0.00000$$

$$\frac{(((N_1{}^4 \cdot N_2-4 \cdot N_1{}^3 \cdot N_2{}^2)+6 \cdot N_1{}^2 \cdot N_2{}^3)-4 \cdot N_1 \cdot N_2{}^4)+N_2{}^5}{N_1{}^4} - I = 0.00000$$

$$\frac{((N_1{}^3 \cdot N_2-3 \cdot N_1{}^2 \cdot N_2{}^2)+3 \cdot N_1 \cdot N_2{}^3)-N_2{}^4}{N_1{}^3} - H = 0.00000$$

$$\frac{(N_1{}^2 \cdot N_2-2 \cdot N_1 \cdot N_2{}^2)+N_2{}^3}{N_1{}^2} - G = 0.00000$$

$$\frac{N_1 \cdot N_2-N_2{}^2}{N_1} - F = 0.00000$$



$N_1 = 2.73670$

$N_2 = 0.77575$

$N_3 = 1.44291$

$\frac{N_1}{N_1-N_2} = 1.39560$

A = 2.01373
B = 2.81035
C = 3.92211
D = 5.47368
E = 7.63905
F = 1.03391
G = 0.74083
H = 0.53084
I = 0.38037

$N_3 \cdot \frac{N_1}{N_1-N_2}^{1} - A = 0.00000$

$N_3 \cdot \frac{N_1}{N_1-N_2}^{2} - B = 0.00000$

$N_3 \cdot \frac{N_1}{N_1-N_2}^{3} - C = 0.00000$

$N_3 \cdot \frac{N_1}{N_1-N_2}^{4} - D = 0.00000$

$N_3 \cdot \frac{N_1}{N_1-N_2}^{5} - E = 0.00000$

$N_3 \cdot \frac{N_1}{N_1-N_2}^{-1} - F = 0.00000$

$N_3 \cdot \frac{N_1}{N_1-N_2}^{-2} - G = 0.00000$

$N_3 \cdot \frac{N_1}{N_1-N_2}^{-3} - H = 0.00000$

$N_3 \cdot \frac{N_1}{N_1-N_2}^{-4} - I = 0.00000$

Plate 10

$\frac{N_1 \cdot N_3}{N_1-N_2} - A = 0.00000$

$\frac{N_1^2 \cdot N_3}{(N_1^2-2 \cdot N_1 \cdot N_2)+N_2^2} - B = 0.00000$

$\frac{N_1^3 \cdot N_3}{((N_1^3-3 \cdot N_1^2 \cdot N_2)+3 \cdot N_1 \cdot N_2^2)-N_2^3} - C = 0.00000$

$\frac{N_1^4 \cdot N_3}{(((N_1^4-4 \cdot N_1^3 \cdot N_2)+6 \cdot N_1^2 \cdot N_2^2)-4 \cdot N_1 \cdot N_2^3)+N_2^4} - D = 0.00000$

$\frac{N_1^5 \cdot N_3}{((((N_1^5-5 \cdot N_1^4 \cdot N_2)+10 \cdot N_1^3 \cdot N_2^2)-10 \cdot N_1^2 \cdot N_2^3)+5 \cdot N_1 \cdot N_2^4)-N_2^5} - E = 0.00000$

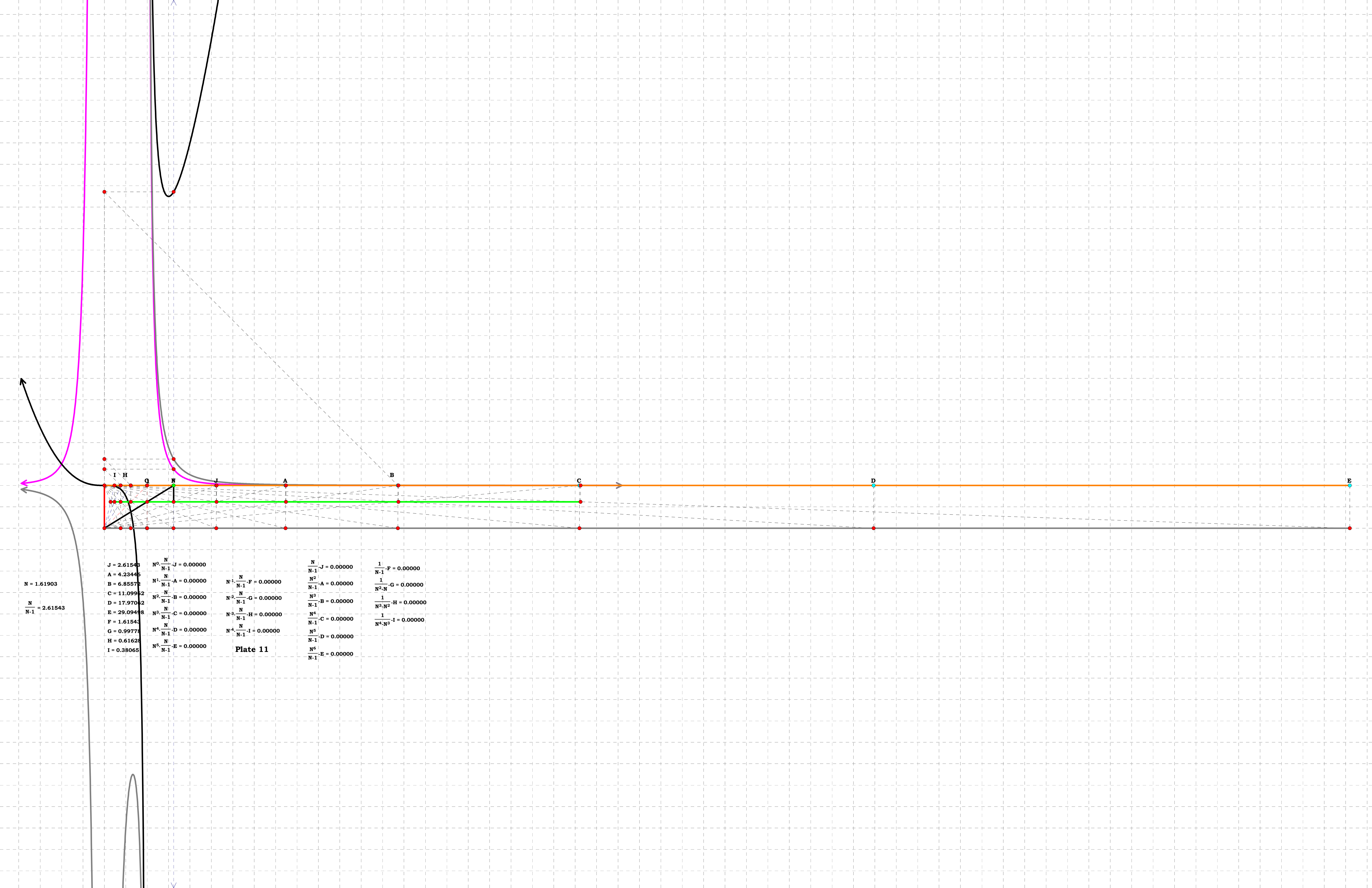
$\frac{(((N_1^4 \cdot N_3-4 \cdot N_1^3 \cdot N_2 \cdot N_3)+6 \cdot N_1^2 \cdot N_2^2 \cdot N_3)-4 \cdot N_1 \cdot N_2^3 \cdot N_3)+N_2^4 \cdot N_3}{N_1^4} - I = 0.00000$

$\frac{((N_1^3 \cdot N_3-3 \cdot N_1^2 \cdot N_2 \cdot N_3)+3 \cdot N_1 \cdot N_2^2 \cdot N_3)-N_2^3 \cdot N_3}{N_1^3} - H = 0.00000$

$\frac{(N_1^2 \cdot N_3-2 \cdot N_1 \cdot N_2 \cdot N_3)+N_2^2 \cdot N_3}{N_1^2} - G = 0.00000$

$\frac{N_1 \cdot N_3-N_2 \cdot N_3}{N_1} - F = 0.00000$

Zero from bottom then top.



$N = 1.61903$

$\frac{N}{N-1} = 2.61543$

$J = 2.61543$
$A = 4.23446$
$B = 6.85572$
$C = 11.09962$
$D = 17.97062$
$E = 29.09498$
$F = 1.61543$
$G = 0.99778$
$H = 0.61628$
$I = 0.38065$

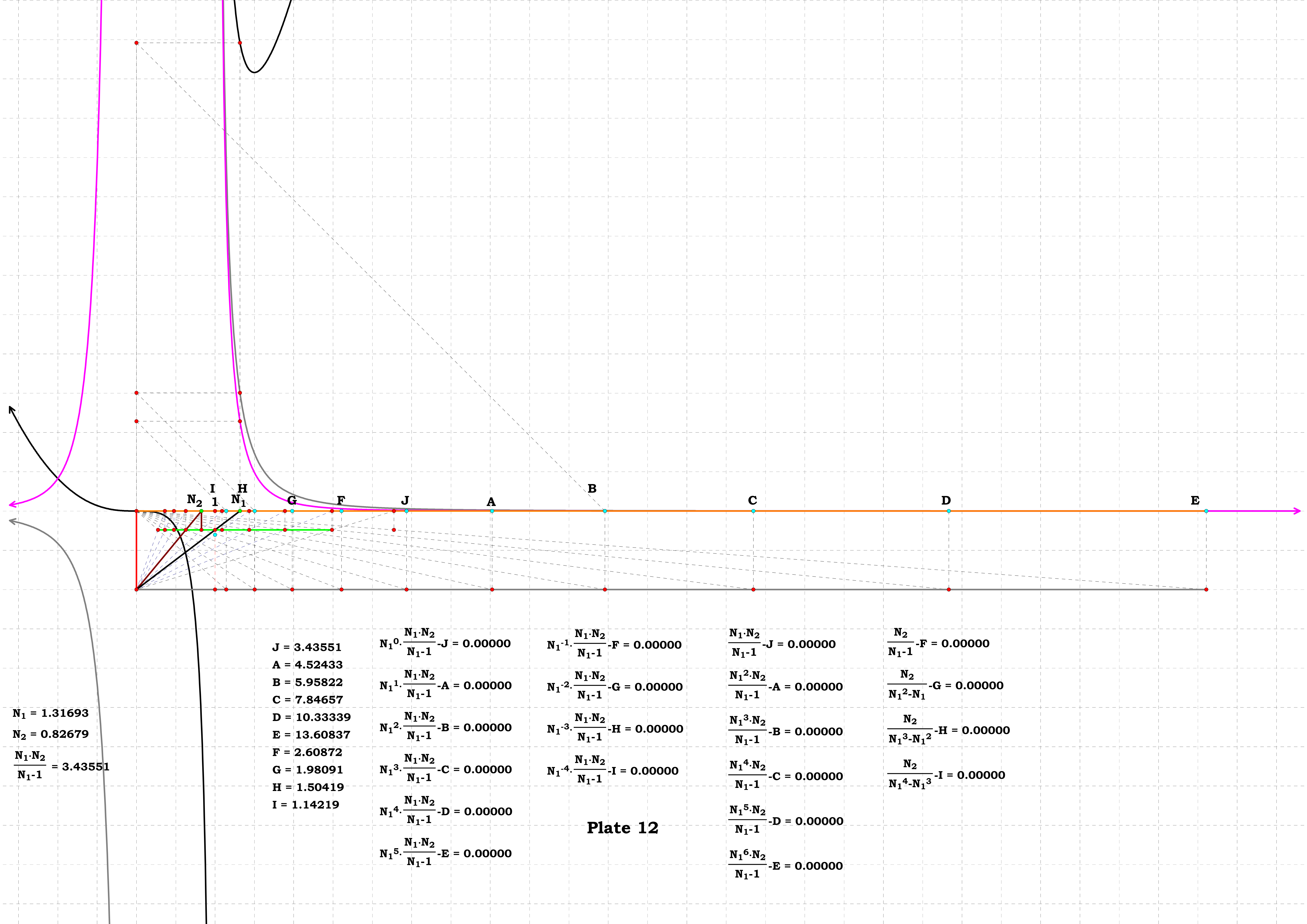
$N^0 \cdot \frac{N}{N-1} - J = 0.00000$
$N^1 \cdot \frac{N}{N-1} - A = 0.00000$
$N^2 \cdot \frac{N}{N-1} - B = 0.00000$
$N^3 \cdot \frac{N}{N-1} - C = 0.00000$
$N^4 \cdot \frac{N}{N-1} - D = 0.00000$
$N^5 \cdot \frac{N}{N-1} - E = 0.00000$

$N^{-1} \cdot \frac{N}{N-1} - F = 0.00000$
$N^{-2} \cdot \frac{N}{N-1} - G = 0.00000$
$N^{-3} \cdot \frac{N}{N-1} - H = 0.00000$
$N^{-4} \cdot \frac{N}{N-1} - I = 0.00000$

Plate 11

$\frac{N}{N-1} - J = 0.00000$
$\frac{N^2}{N-1} - A = 0.00000$
$\frac{N^3}{N-1} - B = 0.00000$
$\frac{N^4}{N-1} - C = 0.00000$
$\frac{N^5}{N-1} - D = 0.00000$
$\frac{N^6}{N-1} - E = 0.00000$

$\frac{1}{N-1} - F = 0.00000$
$\frac{1}{N^2-N} - G = 0.00000$
$\frac{1}{N^3-N^2} - H = 0.00000$
$\frac{1}{N^4-N^3} - I = 0.00000$



$N_1 = 1.31693$

$N_2 = 0.82679$

$\frac{N_1\cdot N_2}{N_1-1} = 3.43551$

J = 3.43551
A = 4.52433
B = 5.95822
C = 7.84657
D = 10.33339
E = 13.60837
F = 2.60872
G = 1.98091
H = 1.50419
I = 1.14219

$N_1^{0}\cdot\frac{N_1\cdot N_2}{N_1-1}-J = 0.00000$

$N_1^{1}\cdot\frac{N_1\cdot N_2}{N_1-1}-A = 0.00000$

$N_1^{2}\cdot\frac{N_1\cdot N_2}{N_1-1}-B = 0.00000$

$N_1^{3}\cdot\frac{N_1\cdot N_2}{N_1-1}-C = 0.00000$

$N_1^{4}\cdot\frac{N_1\cdot N_2}{N_1-1}-D = 0.00000$

$N_1^{5}\cdot\frac{N_1\cdot N_2}{N_1-1}-E = 0.00000$

$N_1^{-1}\cdot\frac{N_1\cdot N_2}{N_1-1}-F = 0.00000$

$N_1^{-2}\cdot\frac{N_1\cdot N_2}{N_1-1}-G = 0.00000$

$N_1^{-3}\cdot\frac{N_1\cdot N_2}{N_1-1}-H = 0.00000$

$N_1^{-4}\cdot\frac{N_1\cdot N_2}{N_1-1}-I = 0.00000$

Plate 12

$\frac{N_1\cdot N_2}{N_1-1}-J = 0.00000$

$\frac{N_1^{2}\cdot N_2}{N_1-1}-A = 0.00000$

$\frac{N_1^{3}\cdot N_2}{N_1-1}-B = 0.00000$

$\frac{N_1^{4}\cdot N_2}{N_1-1}-C = 0.00000$

$\frac{N_1^{5}\cdot N_2}{N_1-1}-D = 0.00000$

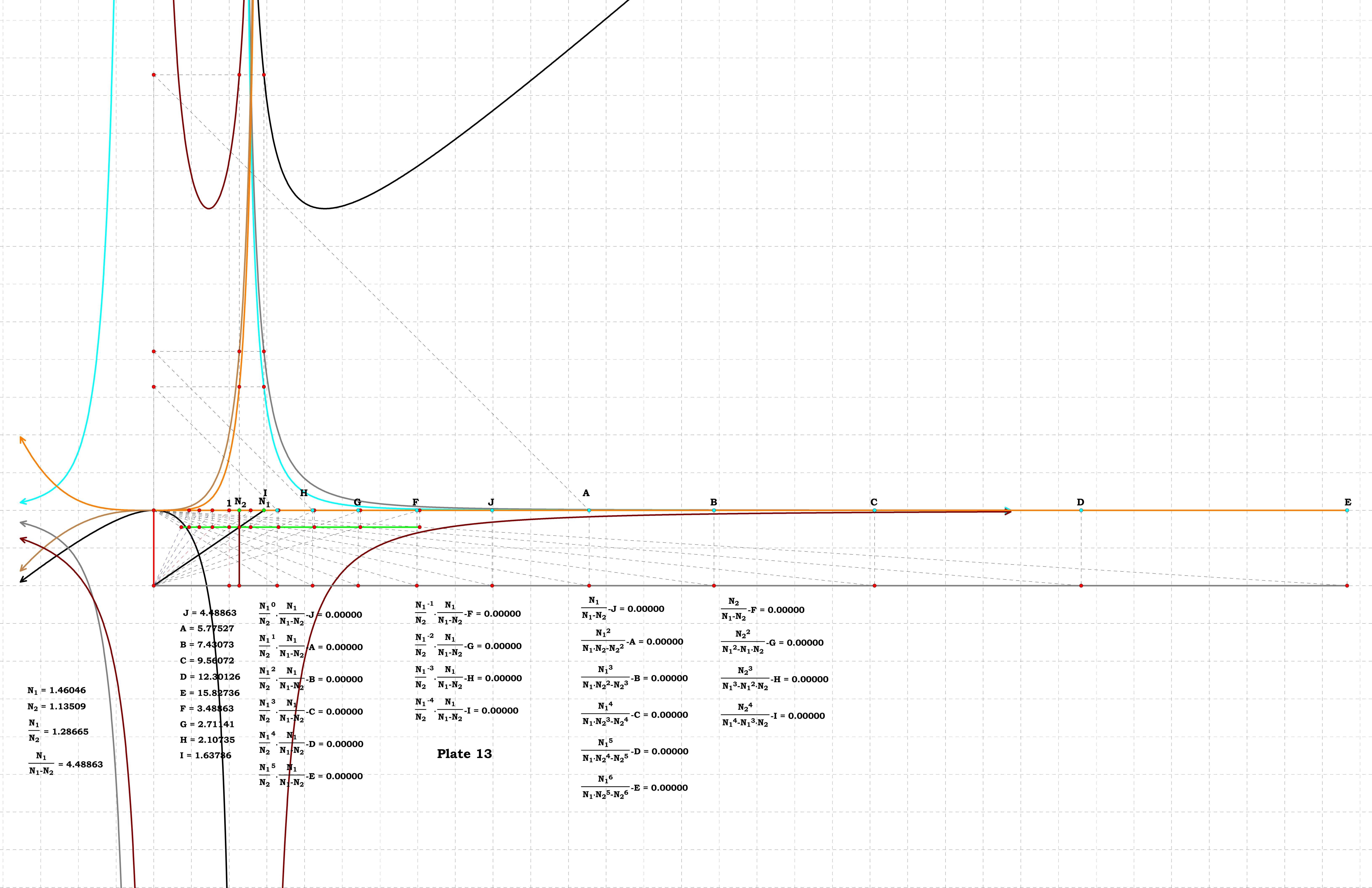
$\frac{N_1^{6}\cdot N_2}{N_1-1}-E = 0.00000$

$\frac{N_2}{N_1-1}-F = 0.00000$

$\frac{N_2}{N_1^{2}-N_1}-G = 0.00000$

$\frac{N_2}{N_1^{3}-N_1^{2}}-H = 0.00000$

$\frac{N_2}{N_1^{4}-N_1^{3}}-I = 0.00000$



$N_1 = 1.46046$

$N_2 = 1.13509$

$\frac{N_1}{N_2} = 1.28665$

$\frac{N_1}{N_1 - N_2} = 4.48863$

J = 4.48863
A = 5.77527
B = 7.43073
C = 9.56072
D = 12.30126
E = 15.82736
F = 3.48863
G = 2.71141
H = 2.10735
I = 1.63786

$$\frac{N_1}{N_2}^{0} \cdot \frac{N_1}{N_1 - N_2} - J = 0.00000$$

$$\frac{N_1}{N_2}^{1} \cdot \frac{N_1}{N_1 - N_2} - A = 0.00000$$

$$\frac{N_1}{N_2}^{2} \cdot \frac{N_1}{N_1 - N_2} - B = 0.00000$$

$$\frac{N_1}{N_2}^{3} \cdot \frac{N_1}{N_1 - N_2} - C = 0.00000$$

$$\frac{N_1}{N_2}^{4} \cdot \frac{N_1}{N_1 - N_2} - D = 0.00000$$

$$\frac{N_1}{N_2}^{5} \cdot \frac{N_1}{N_1 - N_2} - E = 0.00000$$

$$\frac{N_1}{N_2}^{-1} \cdot \frac{N_1}{N_1 - N_2} - F = 0.00000$$

$$\frac{N_1}{N_2}^{-2} \cdot \frac{N_1}{N_1 - N_2} - G = 0.00000$$

$$\frac{N_1}{N_2}^{-3} \cdot \frac{N_1}{N_1 - N_2} - H = 0.00000$$

$$\frac{N_1}{N_2}^{-4} \cdot \frac{N_1}{N_1 - N_2} - I = 0.00000$$

Plate 13

$$\frac{N_1}{N_1 - N_2} - J = 0.00000$$

$$\frac{N_1^2}{N_1 \cdot N_2 - N_2^2} - A = 0.00000$$

$$\frac{N_1^3}{N_1 \cdot N_2^2 - N_2^3} - B = 0.00000$$

$$\frac{N_1^4}{N_1 \cdot N_2^3 - N_2^4} - C = 0.00000$$

$$\frac{N_1^5}{N_1 \cdot N_2^4 - N_2^5} - D = 0.00000$$

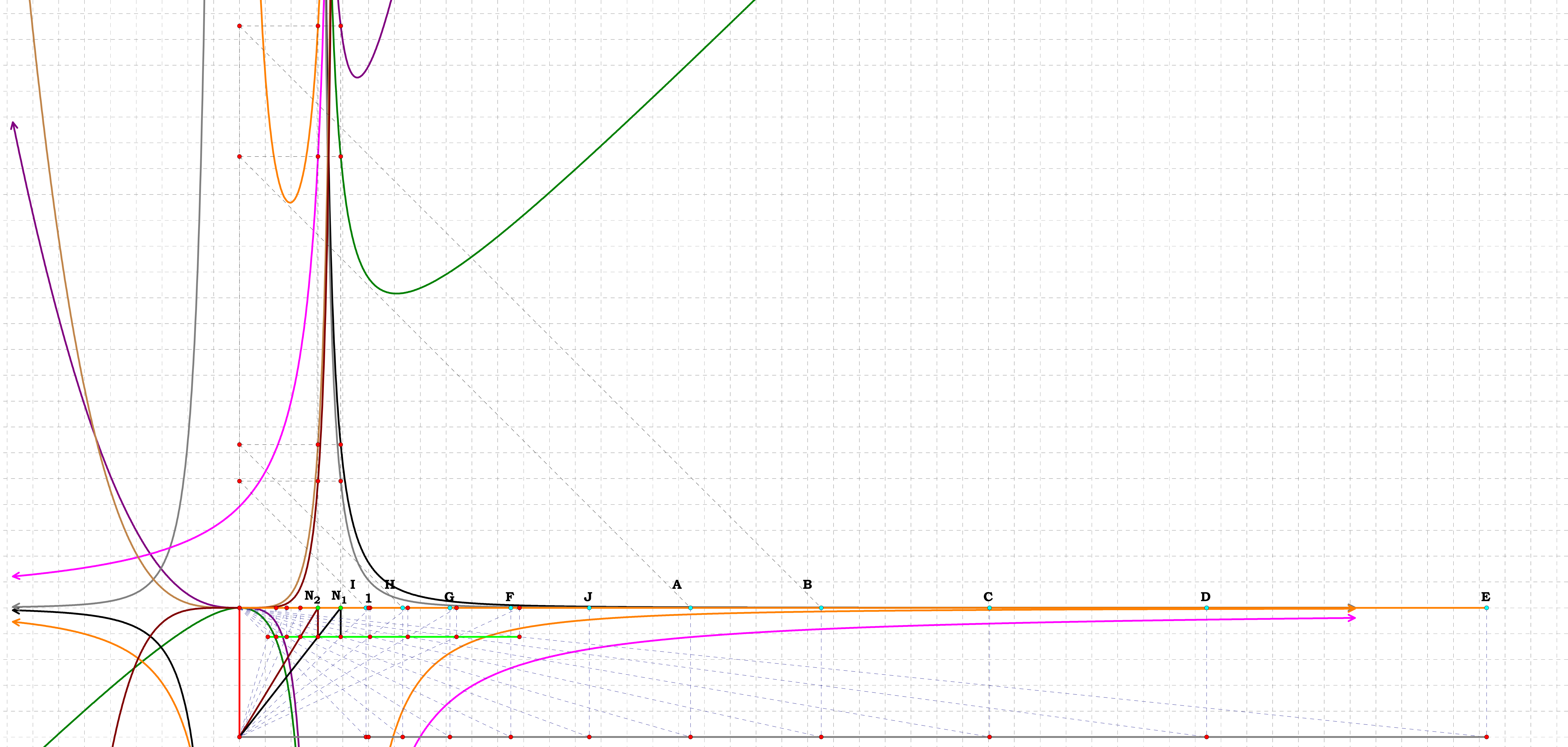
$$\frac{N_1^6}{N_1 \cdot N_2^5 - N_2^6} - E = 0.00000$$

$$\frac{N_2}{N_1 - N_2} - F = 0.00000$$

$$\frac{N_2^2}{N_1^2 - N_1 \cdot N_2} - G = 0.00000$$

$$\frac{N_2^3}{N_1^3 - N_1^2 \cdot N_2} - H = 0.00000$$

$$\frac{N_2^4}{N_1^4 - N_1^3 \cdot N_2} - I = 0.00000$$



$N_1 = 0.78415$

$N_2 = 0.60814$

$\frac{N_1}{N_2} = 1.28943$

$\frac{N_1 \cdot N_2}{N_1 - N_2} = 2.70928$

J = 2.70928
A = 3.49343
B = 4.50454
C = 5.80830
D = 7.48941
E = 9.65708
F = 2.10114
G = 1.62951
H = 1.26374
I = 0.98008

$\frac{N_1}{N_2}^{0} \cdot \frac{N_1 \cdot N_2}{N_1 - N_2} - J = 0.00000$

$\frac{N_1}{N_2}^{1} \cdot \frac{N_1 \cdot N_2}{N_1 - N_2} - A = 0.00000$

$\frac{N_1}{N_2}^{2} \cdot \frac{N_1 \cdot N_2}{N_1 - N_2} - B = 0.00000$

$\frac{N_1}{N_2}^{3} \cdot \frac{N_1 \cdot N_2}{N_1 - N_2} - C = 0.00000$

$\frac{N_1}{N_2}^{4} \cdot \frac{N_1 \cdot N_2}{N_1 - N_2} - D = 0.00000$

$\frac{N_1}{N_2}^{5} \cdot \frac{N_1 \cdot N_2}{N_1 - N_2} - E = 0.00000$

$\frac{N_1}{N_2}^{-1} \cdot \frac{N_1 \cdot N_2}{N_1 - N_2} - F = 0.00000$

$\frac{N_1}{N_2}^{-2} \cdot \frac{N_1 \cdot N_2}{N_1 - N_2} - G = 0.00000$

$\frac{N_1}{N_2}^{-3} \cdot \frac{N_1 \cdot N_2}{N_1 - N_2} - H = 0.00000$

$\frac{N_1}{N_2}^{-4} \cdot \frac{N_1 \cdot N_2}{N_1 - N_2} - I = 0.00000$

Plate 14

$\frac{N_1 \cdot N_2}{N_1 - N_2} - J = 0.00000$

$\frac{N_1^2}{N_1 - N_2} - A = 0.00000$

$\frac{N_1^3}{N_1 \cdot N_2 - N_2^2} - B = 0.00000$

$\frac{N_1^4}{N_1 \cdot N_2^2 - N_2^3} - C = 0.00000$

$\frac{N_1^5}{N_1 \cdot N_2^3 - N_2^4} - D = 0.00000$

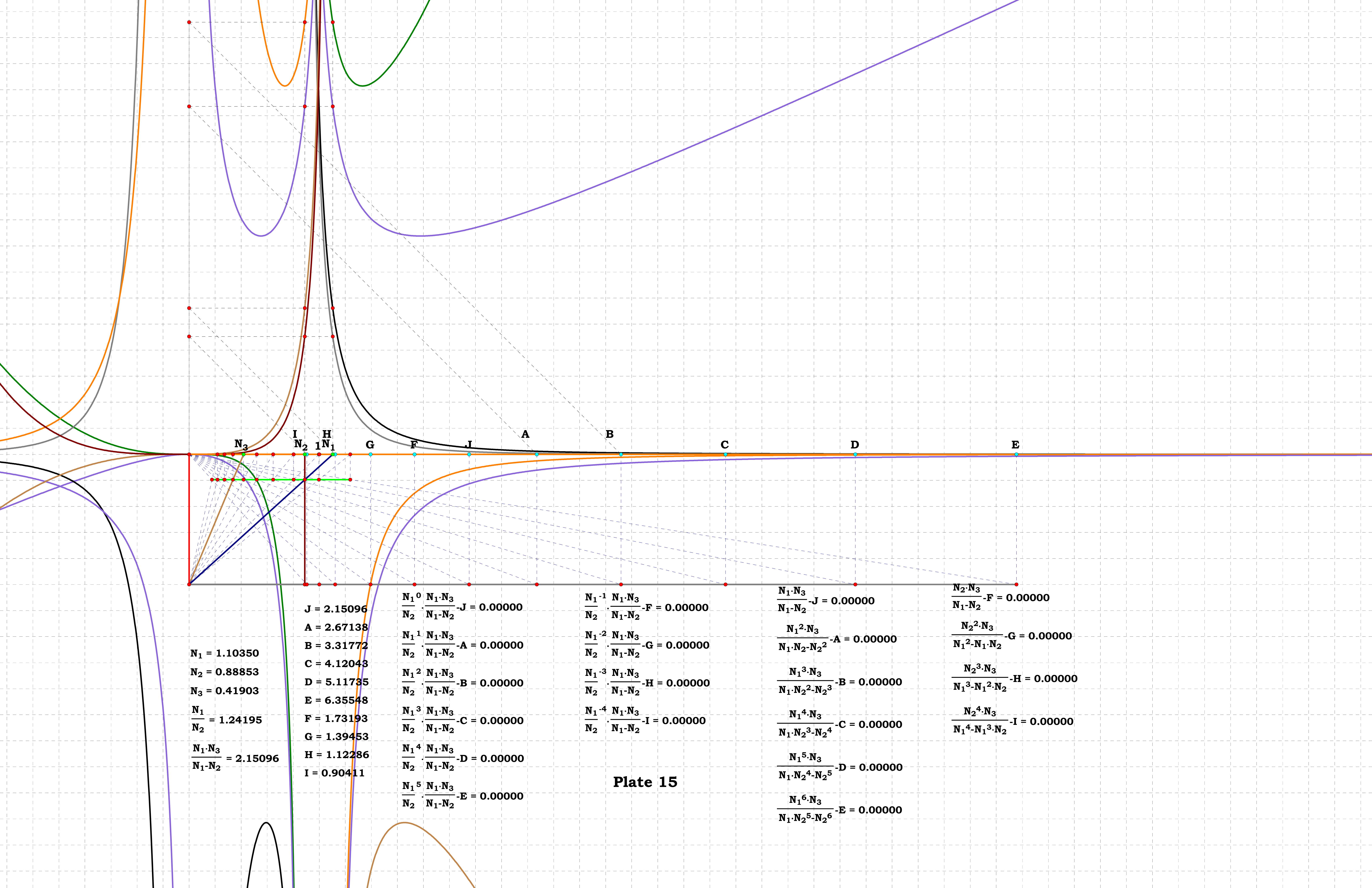
$\frac{N_1^6}{N_1 \cdot N_2^4 - N_2^5} - E = 0.00000$

$\frac{N_2^2}{N_1 - N_2} - F = 0.00000$

$\frac{N_2^3}{N_1^2 - N_1 \cdot N_2} - G = 0.00000$

$\frac{N_2^4}{N_1^3 - N_1^2 \cdot N_2} - H = 0.00000$

$\frac{N_2^5}{N_1^4 - N_1^3 \cdot N_2} - I = 0.00000$



$N_1 = 1.10350$

$N_2 = 0.88853$

$N_3 = 0.41903$

$\frac{N_1}{N_2} = 1.24195$

$\frac{N_1 \cdot N_3}{N_1 - N_2} = 2.15096$

J = 2.15096

A = 2.67138

B = 3.31772

C = 4.12043

D = 5.11735

E = 6.35548

F = 1.73193

G = 1.39453

H = 1.12286

I = 0.90411

$\frac{N_1{}^0}{N_2} \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - J = 0.00000$

$\frac{N_1{}^1}{N_2} \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - A = 0.00000$

$\frac{N_1{}^2}{N_2} \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - B = 0.00000$

$\frac{N_1{}^3}{N_2} \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - C = 0.00000$

$\frac{N_1{}^4}{N_2} \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - D = 0.00000$

$\frac{N_1{}^5}{N_2} \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - E = 0.00000$

$\frac{N_1{}^{-1}}{N_2} \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - F = 0.00000$

$\frac{N_1{}^{-2}}{N_2} \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - G = 0.00000$

$\frac{N_1{}^{-3}}{N_2} \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - H = 0.00000$

$\frac{N_1{}^{-4}}{N_2} \cdot \frac{N_1 \cdot N_3}{N_1 - N_2} - I = 0.00000$

Plate 15

$\frac{N_1 \cdot N_3}{N_1 - N_2} - J = 0.00000$

$\frac{N_1{}^2 \cdot N_3}{N_1 \cdot N_2 - N_2{}^2} - A = 0.00000$

$\frac{N_1{}^3 \cdot N_3}{N_1 \cdot N_2{}^2 - N_2{}^3} - B = 0.00000$

$\frac{N_1{}^4 \cdot N_3}{N_1 \cdot N_2{}^3 - N_2{}^4} - C = 0.00000$

$\frac{N_1{}^5 \cdot N_3}{N_1 \cdot N_2{}^4 - N_2{}^5} - D = 0.00000$

$\frac{N_1{}^6 \cdot N_3}{N_1 \cdot N_2{}^5 - N_2{}^6} - E = 0.00000$

$\frac{N_2 \cdot N_3}{N_1 - N_2} - F = 0.00000$

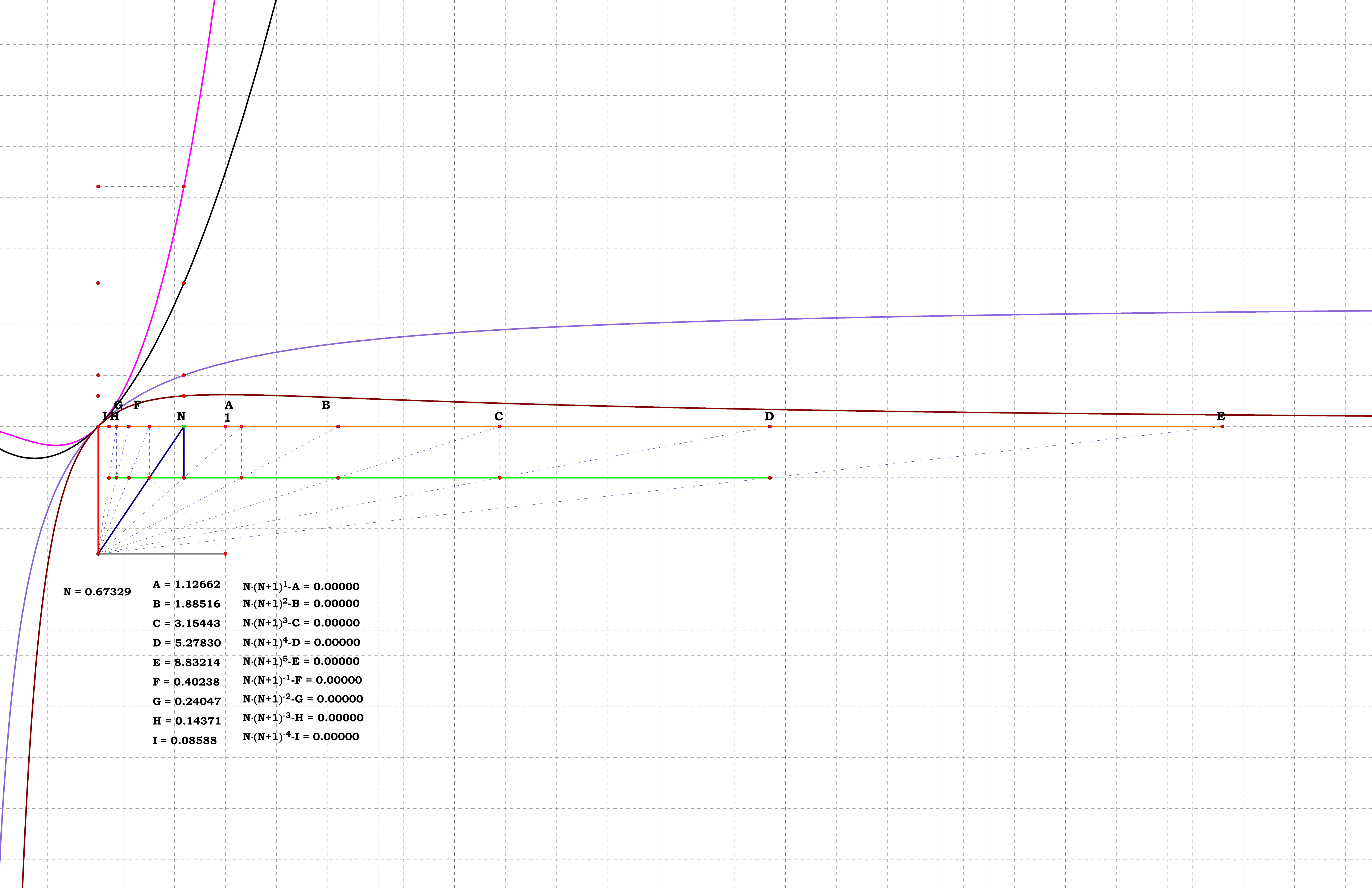
$\frac{N_2{}^2 \cdot N_3}{N_1{}^2 - N_1 \cdot N_2} - G = 0.00000$

$\frac{N_2{}^3 \cdot N_3}{N_1{}^3 - N_1{}^2 \cdot N_2} - H = 0.00000$

$\frac{N_2{}^4 \cdot N_3}{N_1{}^4 - N_1{}^3 \cdot N_2} - I = 0.00000$

Exponential Series Notebook 2

Zero from bottom.



$N = 0.67329$

$A = 1.12662$

$B = 1.88516$

$C = 3.15443$

$D = 5.27830$

$E = 8.83214$

$F = 0.40238$

$G = 0.24047$

$H = 0.14371$

$I = 0.08588$

$N \cdot (N+1)^{1} - A = 0.00000$

$N \cdot (N+1)^{2} - B = 0.00000$

$N \cdot (N+1)^{3} - C = 0.00000$

$N \cdot (N+1)^{4} - D = 0.00000$

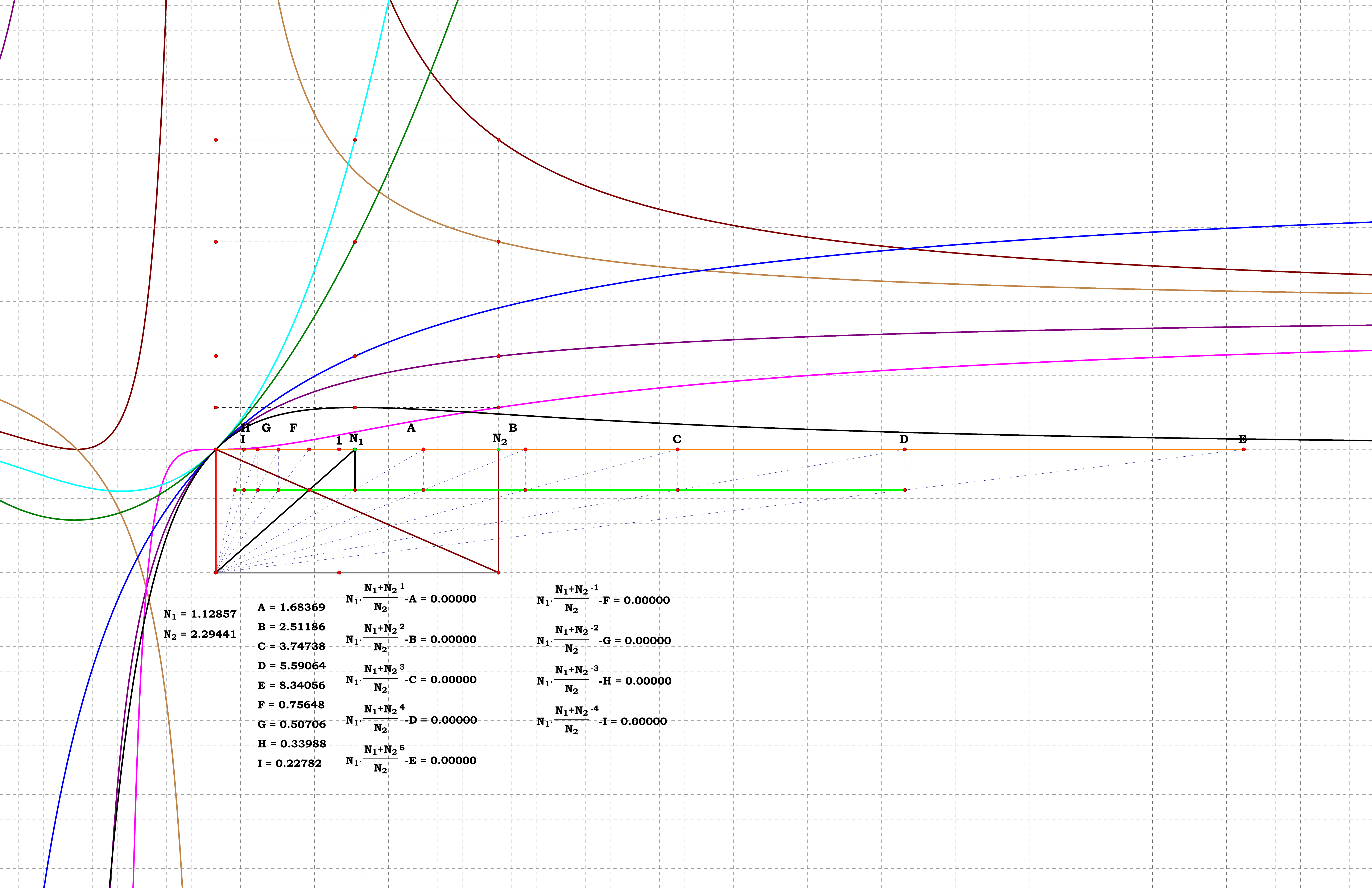
$N \cdot (N+1)^{5} - E = 0.00000$

$N \cdot (N+1)^{-1} - F = 0.00000$

$N \cdot (N+1)^{-2} - G = 0.00000$

$N \cdot (N+1)^{-3} - H = 0.00000$

$N \cdot (N+1)^{-4} - I = 0.00000$



$N_1 = 1.12857$

$N_2 = 2.29441$

$A = 1.68369$

$B = 2.51186$

$C = 3.74738$

$D = 5.59064$

$E = 8.34056$

$F = 0.75648$

$G = 0.50706$

$H = 0.33988$

$I = 0.22782$

$$N_1 \cdot \frac{N_1+N_2\,^{1}}{N_2} - A = 0.00000$$

$$N_1 \cdot \frac{N_1+N_2\,^{2}}{N_2} - B = 0.00000$$

$$N_1 \cdot \frac{N_1+N_2\,^{3}}{N_2} - C = 0.00000$$

$$N_1 \cdot \frac{N_1+N_2\,^{4}}{N_2} - D = 0.00000$$

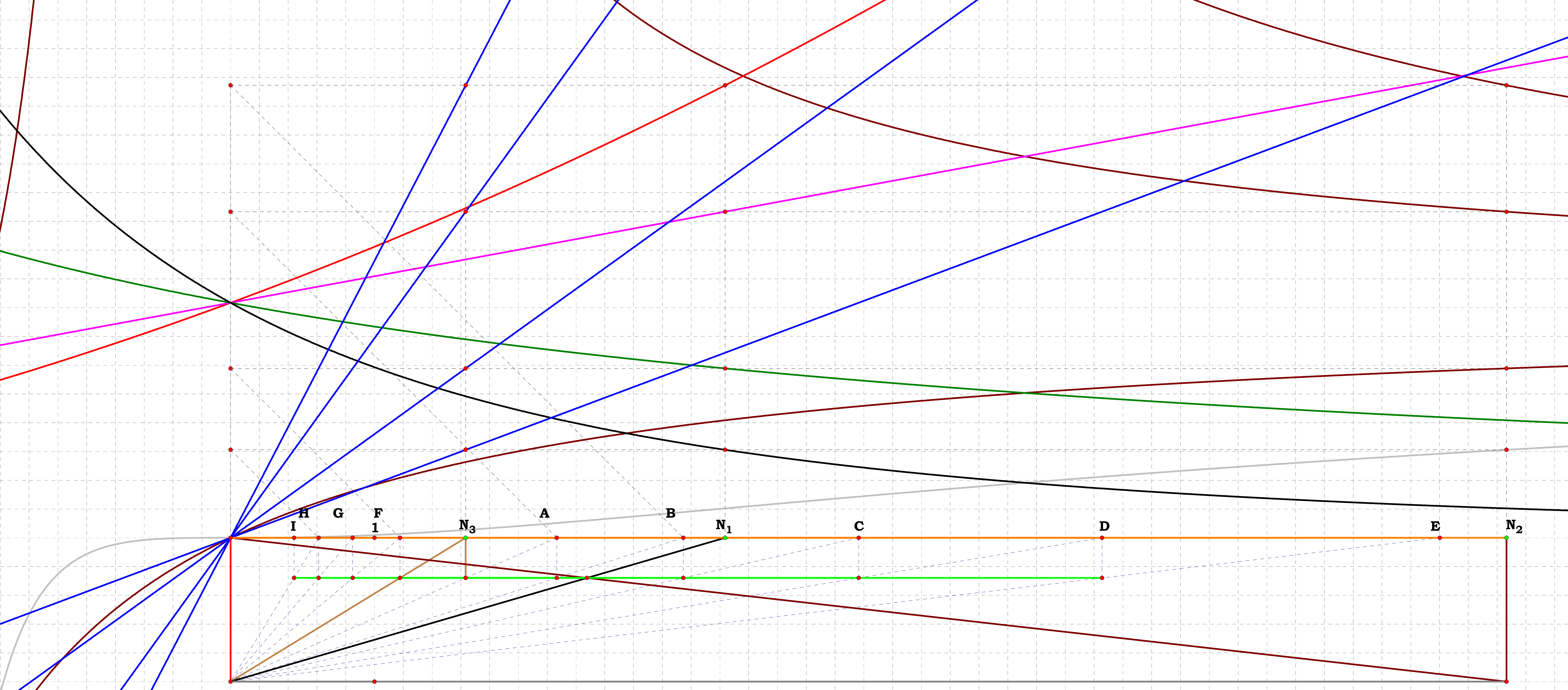
$$N_1 \cdot \frac{N_1+N_2\,^{5}}{N_2} - E = 0.00000$$

$$N_1 \cdot \frac{N_1+N_2\,^{-1}}{N_2} - F = 0.00000$$

$$N_1 \cdot \frac{N_1+N_2\,^{-2}}{N_2} - G = 0.00000$$

$$N_1 \cdot \frac{N_1+N_2\,^{-3}}{N_2} - H = 0.00000$$

$$N_1 \cdot \frac{N_1+N_2\,^{-4}}{N_2} - I = 0.00000$$



$N_1 = 3.43566$

$N_2 = 8.86571$

$N_3 = 1.63369$

A = 2.26679

B = 3.14522

C = 4.36406

D = 6.05523

E = 8.40177

F = 1.17742

G = 0.84858

H = 0.61158

I = 0.44077

$N_3 \cdot \frac{N_1+N_2{}^{1}}{N_2} - A = 0.00000$

$N_3 \cdot \frac{N_1+N_2{}^{2}}{N_2} - B = 0.00000$

$N_3 \cdot \frac{N_1+N_2{}^{3}}{N_2} - C = 0.00000$

$N_3 \cdot \frac{N_1+N_2{}^{4}}{N_2} - D = 0.00000$

$N_3 \cdot \frac{N_1+N_2{}^{5}}{N_2} - E = 0.00000$

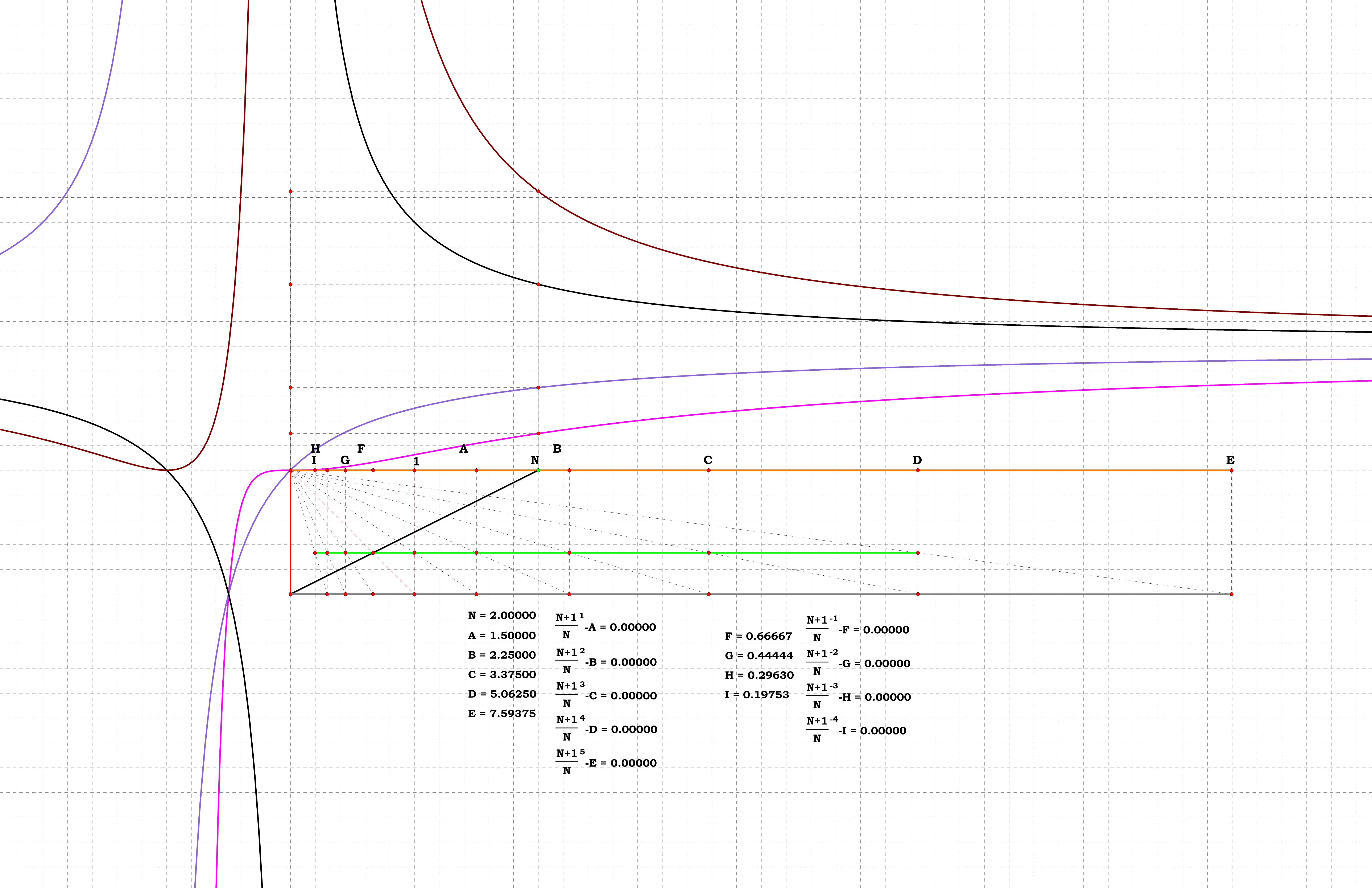
$N_3 \cdot \frac{N_1+N_2{}^{-1}}{N_2} - F = 0.00000$

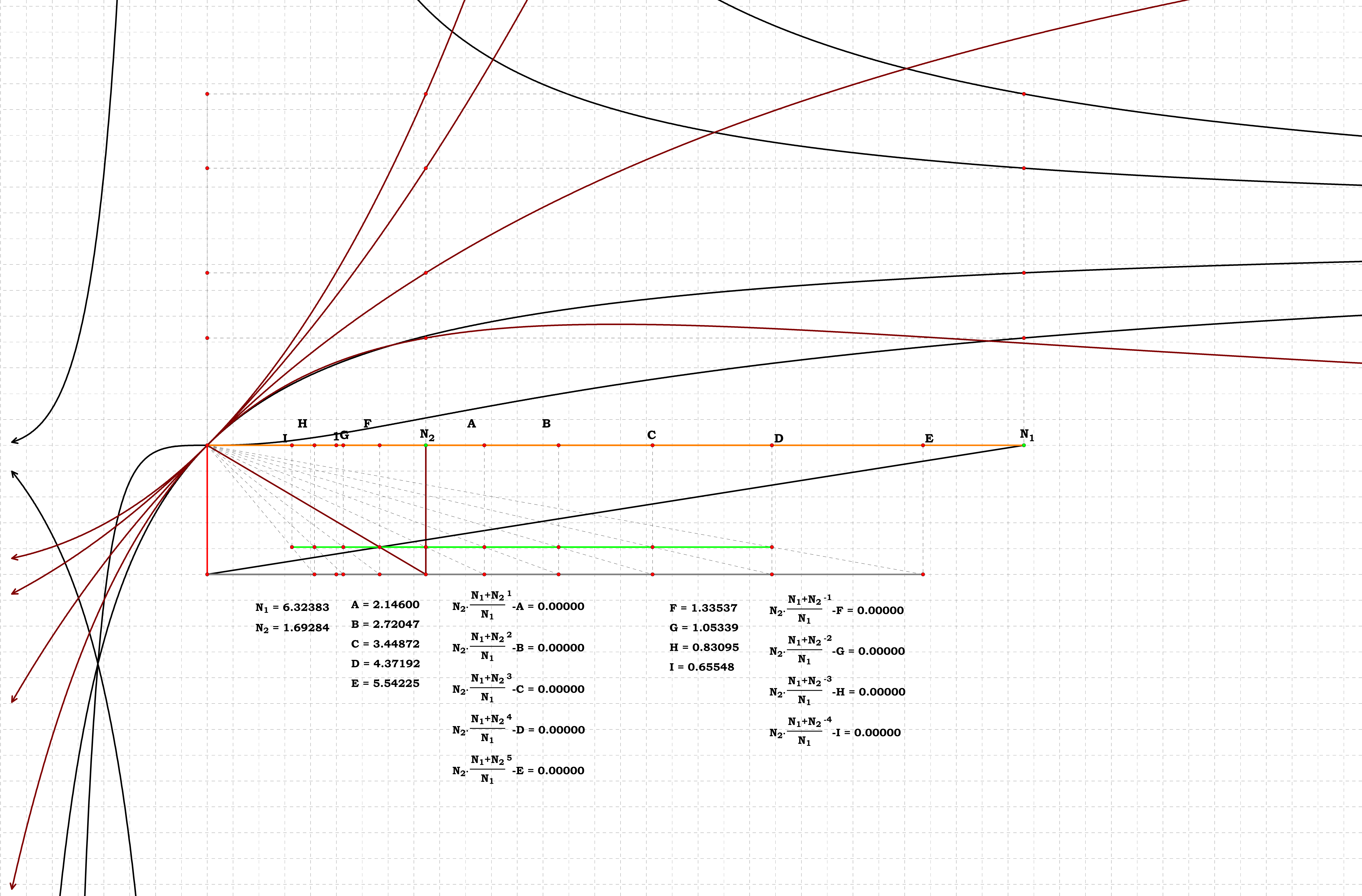
$N_3 \cdot \frac{N_1+N_2{}^{-2}}{N_2} - G = 0.00000$

$N_3 \cdot \frac{N_1+N_2{}^{-3}}{N_2} - H = 0.00000$

$N_3 \cdot \frac{N_1+N_2{}^{-4}}{N_2} - I = 0.00000$

Zero from top.


H
F
A
B
I
G
1
N
C
D
E
N = 2.00000
A = 1.50000
B = 2.25000
C = 3.37500
D = 5.06250
E = 7.59375
$\frac{N+1}{N}^{1}$ -A = 0.00000
$\frac{N+1}{N}^{2}$ -B = 0.00000
$\frac{N+1}{N}^{3}$ -C = 0.00000
$\frac{N+1}{N}^{4}$ -D = 0.00000
$\frac{N+1}{N}^{5}$ -E = 0.00000
F = 0.66667
G = 0.44444
H = 0.29630
I = 0.19753
$\frac{N+1}{N}^{-1}$ -F = 0.00000
$\frac{N+1}{N}^{-2}$ -G = 0.00000
$\frac{N+1}{N}^{-3}$ -H = 0.00000
$\frac{N+1}{N}^{-4}$ -I = 0.00000



$N_1 = 6.32383$

$N_2 = 1.69284$

$A = 2.14600$

$B = 2.72047$

$C = 3.44872$

$D = 4.37192$

$E = 5.54225$

$N_2 \cdot \frac{N_1+N_2}{N_1}^{1} - A = 0.00000$

$N_2 \cdot \frac{N_1+N_2}{N_1}^{2} - B = 0.00000$

$N_2 \cdot \frac{N_1+N_2}{N_1}^{3} - C = 0.00000$

$N_2 \cdot \frac{N_1+N_2}{N_1}^{4} - D = 0.00000$

$N_2 \cdot \frac{N_1+N_2}{N_1}^{5} - E = 0.00000$

$F = 1.33537$

$G = 1.05339$

$H = 0.83095$

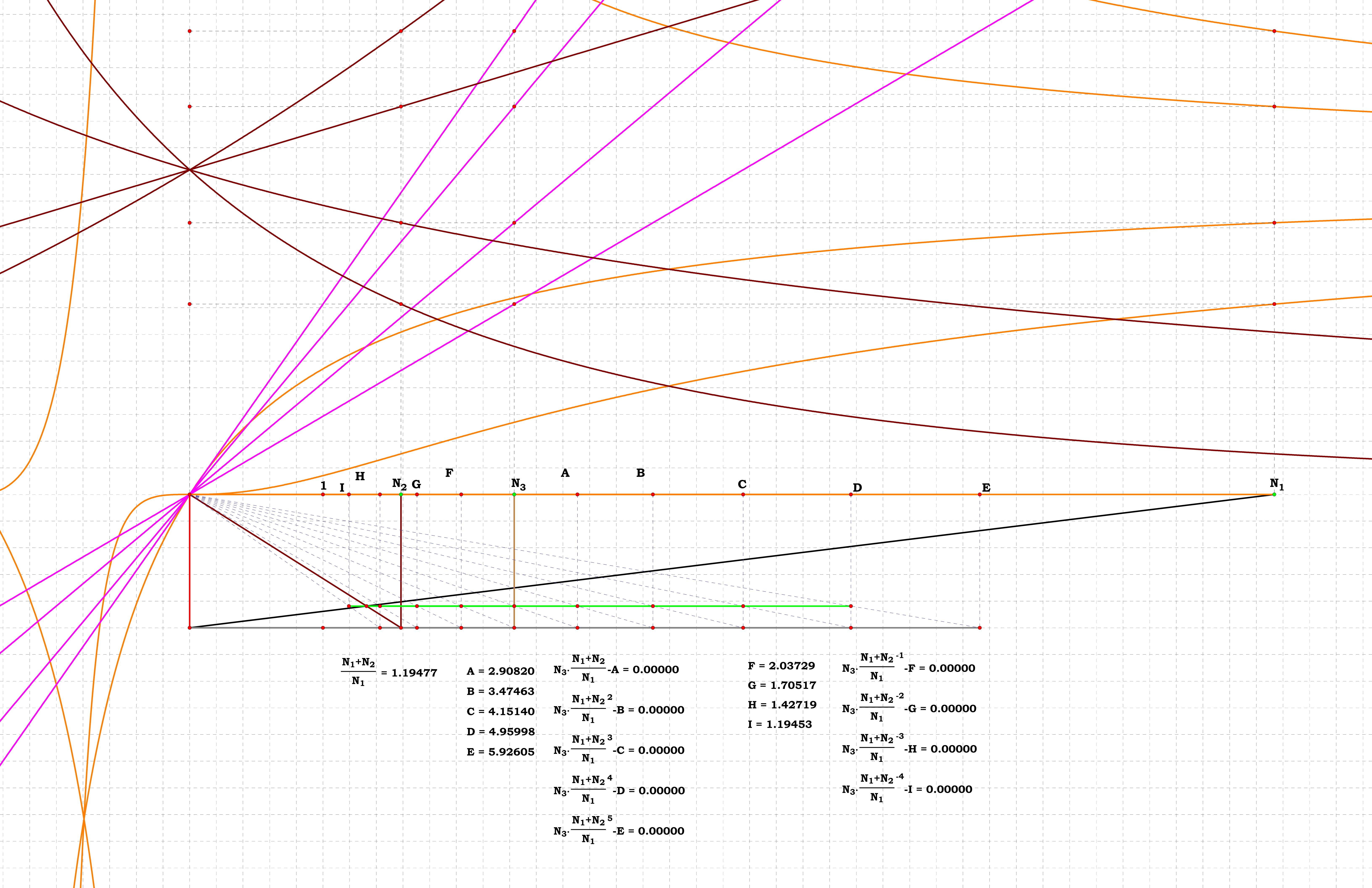
$I = 0.65548$

$N_2 \cdot \frac{N_1+N_2}{N_1}^{-1} - F = 0.00000$

$N_2 \cdot \frac{N_1+N_2}{N_1}^{-2} - G = 0.00000$

$N_2 \cdot \frac{N_1+N_2}{N_1}^{-3} - H = 0.00000$

$N_2 \cdot \frac{N_1+N_2}{N_1}^{-4} - I = 0.00000$



$\frac{N_1+N_2}{N_1} = 1.19477$

A = 2.90820

B = 3.47463

C = 4.15140

D = 4.95998

E = 5.92605

$N_3 \cdot \frac{N_1+N_2}{N_1} - A = 0.00000$

$N_3 \cdot \frac{N_1+N_2}{N_1}^{2} - B = 0.00000$

$N_3 \cdot \frac{N_1+N_2}{N_1}^{3} - C = 0.00000$

$N_3 \cdot \frac{N_1+N_2}{N_1}^{4} - D = 0.00000$

$N_3 \cdot \frac{N_1+N_2}{N_1}^{5} - E = 0.00000$

F = 2.03729

G = 1.70517

H = 1.42719

I = 1.19453

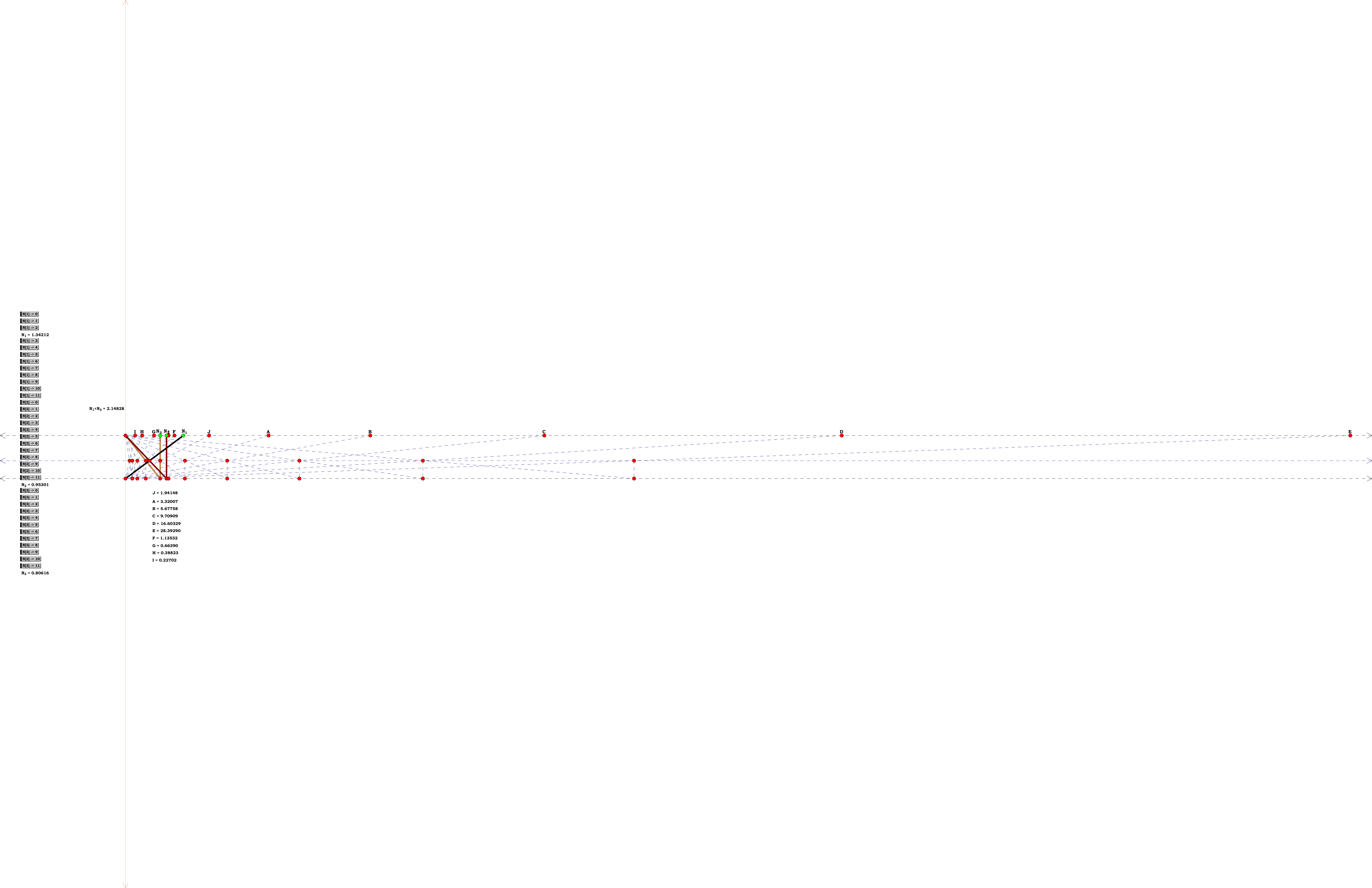
$N_3 \cdot \frac{N_1+N_2}{N_1}^{-1} - F = 0.00000$

$N_3 \cdot \frac{N_1+N_2}{N_1}^{-2} - G = 0.00000$

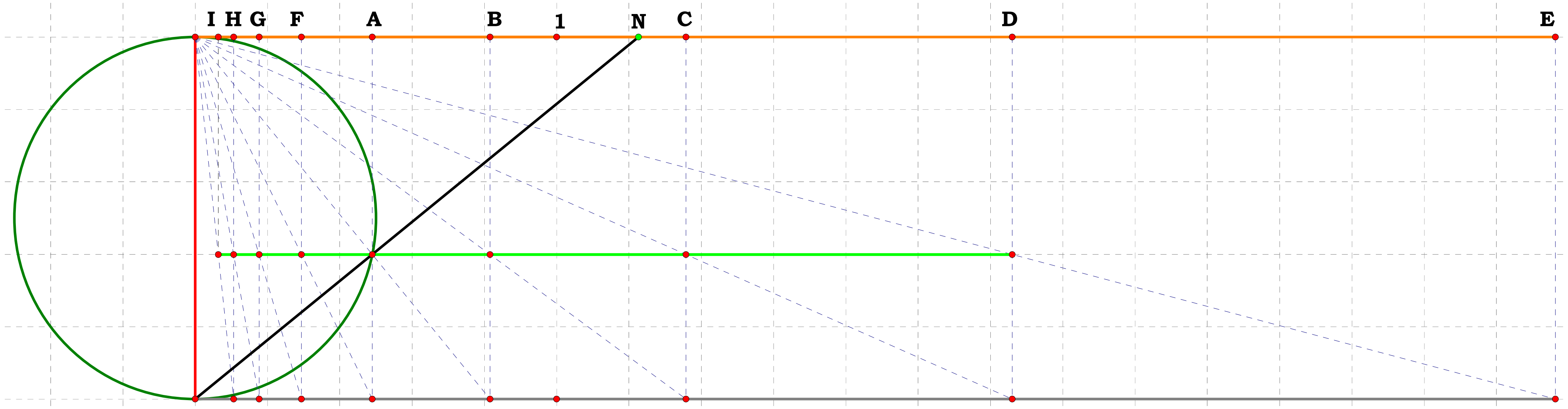
$N_3 \cdot \frac{N_1+N_2}{N_1}^{-3} - H = 0.00000$

$N_3 \cdot \frac{N_1+N_2}{N_1}^{-4} - I = 0.00000$

Zero from bottom then top.


N[1] -> 0
N[1] -> 1
N[1] -> 2
N₁ = 1.34212
N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11
N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11
N₂ = 0.95301
N[3] -> 0
N[3] -> 1
N[3] -> 2
N[3] -> 3
N[3] -> 4
N[3] -> 5
N[3] -> 6
N[3] -> 7
N[3] -> 8
N[3] -> 9
N[3] -> 10
N[3] -> 11
N₃ = 0.80616
N₁+N₃ = 2.14828
I
H
G
N₃
N₂
F
N₁
J
A
B
C
D
E
J = 1.94148
A = 3.32007
B = 5.67758
C = 9.70909
D = 16.60329
E = 28.39290
F = 1.13532
G = 0.66390
H = 0.38823
I = 0.22702

Exponential Series Notebook 3



$$\frac{N}{N^2+1} = 0.48977$$

$$\frac{N^2+1}{N^2} = 1.66488$$

N = 1.22639

A = 0.48977
B = 0.81540
C = 1.35755
D = 2.26016
E = 3.76290

$$\frac{N}{N^2+1}\cdot{\frac{N^2+1}{N^2}}^{0} - A = 0.00000$$

$$\frac{N}{N^2+1}\cdot{\frac{N^2+1}{N^2}}^{1} - B = 0.00000$$

$$\frac{N}{N^2+1}\cdot{\frac{N^2+1}{N^2}}^{2} - C = 0.00000$$

$$\frac{N}{N^2+1}\cdot{\frac{N^2+1}{N^2}}^{3} - D = 0.00000$$

$$\frac{N}{N^2+1}\cdot{\frac{N^2+1}{N^2}}^{4} - E = 0.00000$$

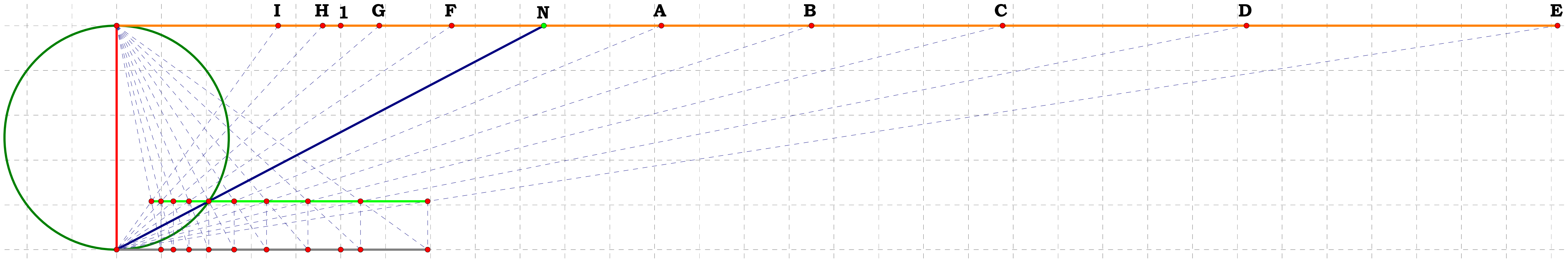
F = 0.29417
G = 0.17669
H = 0.10613
I = 0.06375

$$\frac{N}{N^2+1}\cdot{\frac{N^2+1}{N^2}}^{-1} - F = 0.00000$$

$$\frac{N}{N^2+1}\cdot{\frac{N^2+1}{N^2}}^{-2} - G = 0.00000$$

$$\frac{N}{N^2+1}\cdot{\frac{N^2+1}{N^2}}^{-3} - H = 0.00000$$

$$\frac{N}{N^2+1}\cdot{\frac{N^2+1}{N^2}}^{-4} - I = 0.00000$$



$$\frac{N^2+1}{N^2} = 1.27525$$

$$\frac{N^2+1}{N} = 2.43071$$

$$N+\frac{1}{N} = 2.43071$$

$N = 1.90607$

$A = 2.43071$
$B = 3.09976$
$C = 3.95295$
$D = 5.04098$
$E = 6.42849$

$$\frac{N^2+1}{N} \cdot \frac{N^2+1}{N^2}^{0} - A = 0.00000$$

$$\frac{N^2+1}{N} \cdot \frac{N^2+1}{N^2}^{1} - B = 0.00000$$

$$\frac{N^2+1}{N} \cdot \frac{N^2+1}{N^2}^{2} - C = 0.00000$$

$$\frac{N^2+1}{N} \cdot \frac{N^2+1}{N^2}^{3} - D = 0.00000$$

$$\frac{N^2+1}{N} \cdot \frac{N^2+1}{N^2}^{4} - E = 0.00000$$

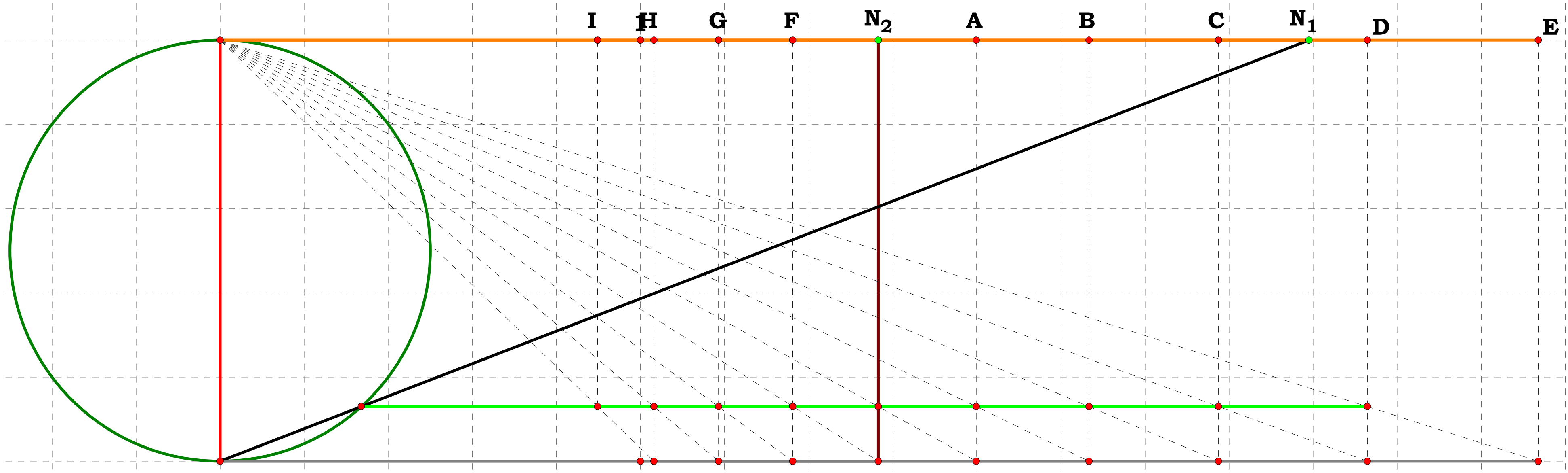
$F = 1.49467$
$G = 1.17207$
$H = 0.91909$
$I = 0.72072$

$$\frac{N^2+1}{N} \cdot \frac{N^2+1}{N^2}^{-2} - F = 0.00000$$

$$\frac{N^2+1}{N} \cdot \frac{N^2+1}{N^2}^{-3} - G = 0.00000$$

$$\frac{N^2+1}{N} \cdot \frac{N^2+1}{N^2}^{-4} - H = 0.00000$$

$$\frac{N^2+1}{N} \cdot \frac{N^2+1}{N^2}^{-5} - I = 0.00000$$



$$\frac{N_1^2+1}{N_1^2} = 1.14908$$

$$\frac{N_2\cdot(N_1^2+1)}{N_1^2} = 1.79864$$

$N_1 = 2.58997$

$N_2 = 1.56529$

A = 1.79864

B = 2.06677

C = 2.37488

D = 2.72892

E = 3.13573

$$\frac{N_2\cdot(N_1^2+1)}{N_1^2}\cdot\frac{N_1^2+1}{N_1^2}^{0} - A = 0.00000$$

$$\frac{N_2\cdot(N_1^2+1)}{N_1^2}\cdot\frac{N_1^2+1}{N_1^2}^{1} - B = 0.00000$$

$$\frac{N_2\cdot(N_1^2+1)}{N_1^2}\cdot\frac{N_1^2+1}{N_1^2}^{2} - C = 0.00000$$

$$\frac{N_2\cdot(N_1^2+1)}{N_1^2}\cdot\frac{N_1^2+1}{N_1^2}^{3} - D = 0.00000$$

$$\frac{N_2\cdot(N_1^2+1)}{N_1^2}\cdot\frac{N_1^2+1}{N_1^2}^{4} - E = 0.00000$$

F = 1.36221

G = 1.18549

H = 1.03169

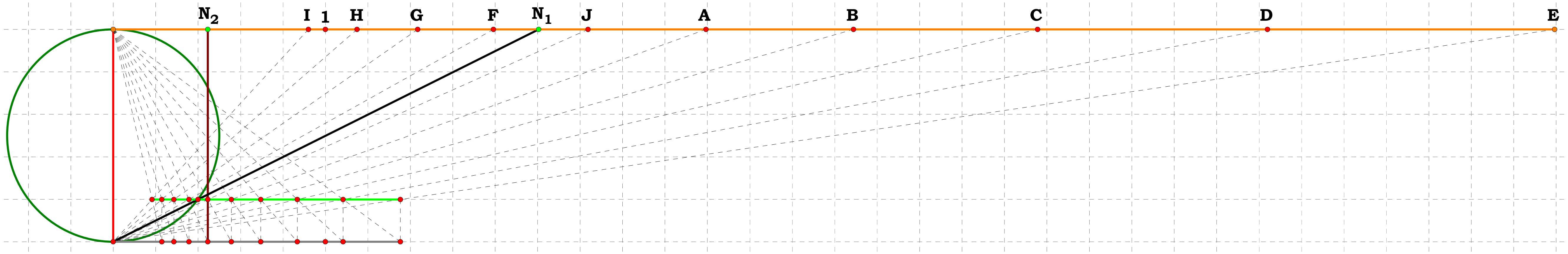
I = 0.89784

$$\frac{N_2\cdot(N_1^2+1)}{N_1^2}\cdot\frac{N_1^2+1}{N_1^2}^{-2} - F = 0.00000$$

$$\frac{N_2\cdot(N_1^2+1)}{N_1^2}\cdot\frac{N_1^2+1}{N_1^2}^{-3} - G = 0.00000$$

$$\frac{N_2\cdot(N_1^2+1)}{N_1^2}\cdot\frac{N_1^2+1}{N_1^2}^{-4} - H = 0.00000$$

$$\frac{N_2\cdot(N_1^2+1)}{N_1^2}\cdot\frac{N_1^2+1}{N_1^2}^{-5} - I = 0.00000$$



$N_2\cdot(N_1^2+1) = 2.23722$

$\frac{N_1^2+1}{N_1^2} = 1.24872$

$N_1 = 2.00514$

$N_2 = 0.44561$

A = 2.79366
B = 3.48849
C = 4.35614
D = 5.43960
E = 6.79253

$(N_2\cdot(N_1^2+1))\cdot{\frac{N_1^2+1}{N_1^2}}^{1} - A = 0.00000$

$(N_2\cdot(N_1^2+1))\cdot{\frac{N_1^2+1}{N_1^2}}^{2} - B = 0.00000$

$(N_2\cdot(N_1^2+1))\cdot{\frac{N_1^2+1}{N_1^2}}^{3} - C = 0.00000$

$(N_2\cdot(N_1^2+1))\cdot{\frac{N_1^2+1}{N_1^2}}^{4} - D = 0.00000$

$(N_2\cdot(N_1^2+1))\cdot{\frac{N_1^2+1}{N_1^2}}^{5} - E = 0.00000$

J = 2.23722
F = 1.79161
G = 1.43476
H = 1.14898
I = 0.92013

$(N_2\cdot(N_1^2+1))\cdot{\frac{N_1^2+1}{N_1^2}}^{0} - J = 0.00000$

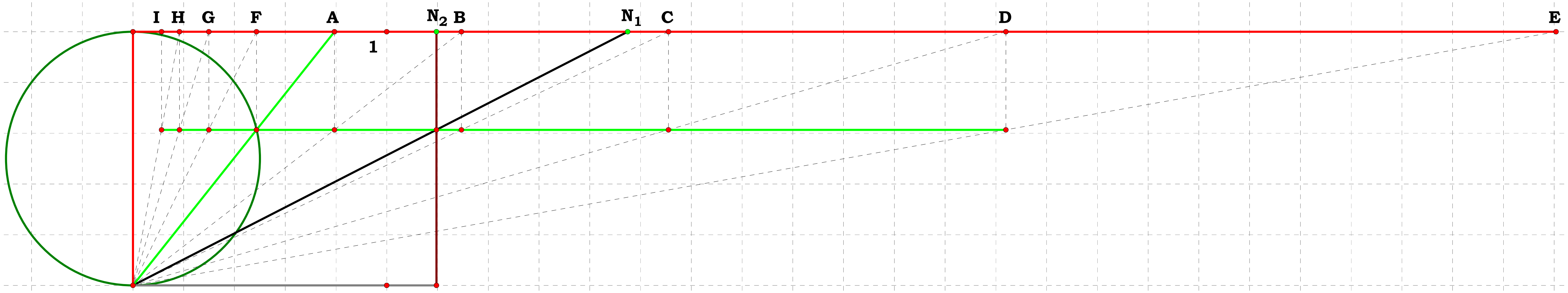
$(N_2\cdot(N_1^2+1))\cdot{\frac{N_1^2+1}{N_1^2}}^{-1} - F = 0.00000$

$(N_2\cdot(N_1^2+1))\cdot{\frac{N_1^2+1}{N_1^2}}^{-2} - G = 0.00000$

$(N_2\cdot(N_1^2+1))\cdot{\frac{N_1^2+1}{N_1^2}}^{-3} - H = 0.00000$

$(N_2\cdot(N_1^2+1))\cdot{\frac{N_1^2+1}{N_1^2}}^{-4} - I = 0.00000$

Topic divider



$$\frac{N_1}{N_2} = 1.63024$$

$$\sqrt{\frac{N_1-N_2}{N_2}} = 0.79388$$

$N_1 = 1.94939$

$N_2 = 1.19577$

A = 0.79388
B = 1.29421
C = 2.10988
D = 3.43962
E = 5.60741

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1{}^{0}}{N_2} - A = 0.00000$$

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1{}^{1}}{N_2} - B = 0.00000$$

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1{}^{2}}{N_2} - C = 0.00000$$

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1{}^{3}}{N_2} - D = 0.00000$$

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1{}^{4}}{N_2} - E = 0.00000$$

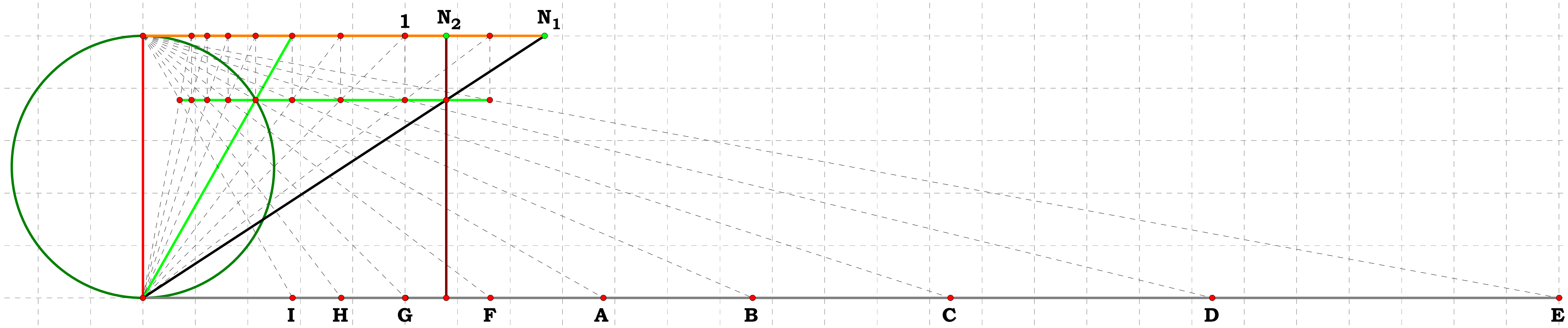
F = 0.48697
G = 0.29871
H = 0.18323
I = 0.11239

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1{}^{-1}}{N_2} - F = 0.00000$$

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1{}^{-2}}{N_2} - G = 0.00000$$

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1{}^{-3}}{N_2} - H = 0.00000$$

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1{}^{-4}}{N_2} - I = 0.00000$$



$$\sqrt{\frac{N_2}{N_1-N_2}} = 1.75589$$

$$\frac{N_1}{N_2} = 1.32434$$

$N_1 = 1.53175$

$N_2 = 1.15661$

$A = 1.75589$

$B = 2.32540$

$C = 3.07963$

$D = 4.07849$

$E = 5.40133$

$$\sqrt{\frac{N_2}{N_1-N_2}} \cdot \frac{N_1}{N_2}^{0} - A = 0.00000$$

$$\sqrt{\frac{N_2}{N_1-N_2}} \cdot \frac{N_1}{N_2}^{1} - B = 0.00000$$

$$\sqrt{\frac{N_2}{N_1-N_2}} \cdot \frac{N_1}{N_2}^{2} - C = 0.00000$$

$$\sqrt{\frac{N_2}{N_1-N_2}} \cdot \frac{N_1}{N_2}^{3} - D = 0.00000$$

$$\sqrt{\frac{N_2}{N_1-N_2}} \cdot \frac{N_1}{N_2}^{4} - E = 0.00000$$

$F = 1.32585$

$G = 1.00114$

$H = 0.75595$

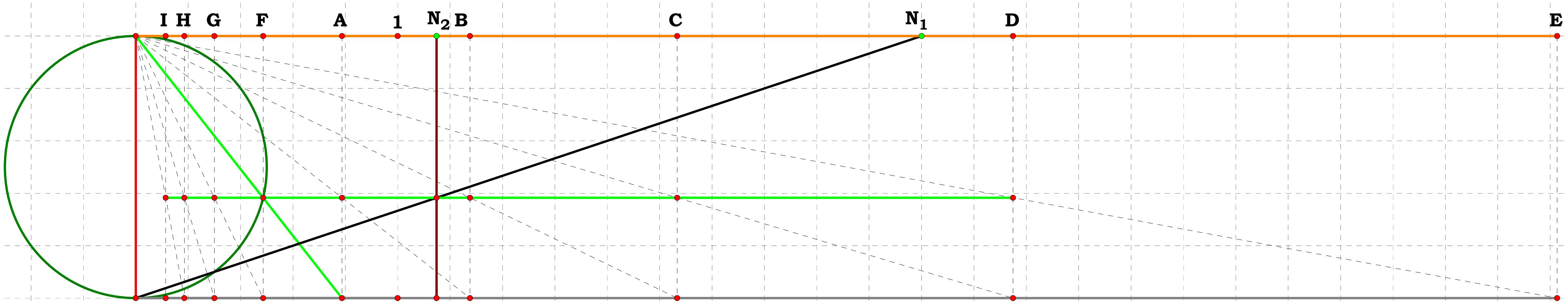
$I = 0.57081$

$$\sqrt{\frac{N_2}{N_1-N_2}} \cdot \frac{N_1}{N_2}^{-1} - F = 0.00000$$

$$\sqrt{\frac{N_2}{N_1-N_2}} \cdot \frac{N_1}{N_2}^{-2} - G = 0.00000$$

$$\sqrt{\frac{N_2}{N_1-N_2}} \cdot \frac{N_1}{N_2}^{-3} - H = 0.00000$$

$$\sqrt{\frac{N_2}{N_1-N_2}} \cdot \frac{N_1}{N_2}^{-4} - I = 0.00000$$



$\sqrt{\frac{N_2}{N_1-N_2}} = 0.78754$

$\frac{N_1}{N_1-N_2} = 1.62022$

$N_1 = 3.00000$

$N_2 = 1.14840$

A = 0.78754
B = 1.27600
C = 2.06740
D = 3.34965
E = 5.42718

$\sqrt{\frac{N_2}{N_1-N_2}}\cdot{\frac{N_1}{N_1-N_2}}^{0}-A = 0.00000$

$\sqrt{\frac{N_2}{N_1-N_2}}\cdot{\frac{N_1}{N_1-N_2}}^{1}-B = 0.00000$

$\sqrt{\frac{N_2}{N_1-N_2}}\cdot{\frac{N_1}{N_1-N_2}}^{2}-C = 0.00000$

$\sqrt{\frac{N_2}{N_1-N_2}}\cdot{\frac{N_1}{N_1-N_2}}^{3}-D = 0.00000$

$\sqrt{\frac{N_2}{N_1-N_2}}\cdot{\frac{N_1}{N_1-N_2}}^{4}-E = 0.00000$

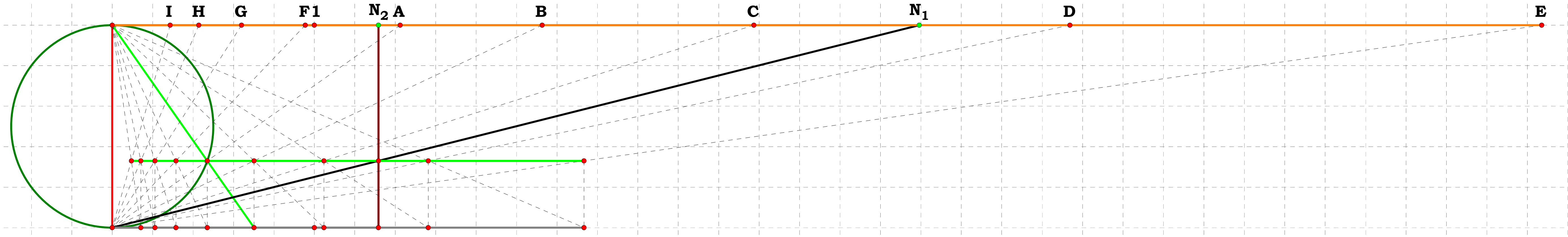
F = 0.48607
G = 0.30000
H = 0.18516
I = 0.11428

$\sqrt{\frac{N_2}{N_1-N_2}}\cdot{\frac{N_1}{N_1-N_2}}^{-1}-F = 0.00000$

$\sqrt{\frac{N_2}{N_1-N_2}}\cdot{\frac{N_1}{N_1-N_2}}^{-2}-G = 0.00000$

$\sqrt{\frac{N_2}{N_1-N_2}}\cdot{\frac{N_1}{N_1-N_2}}^{-3}-H = 0.00000$

$\sqrt{\frac{N_2}{N_1-N_2}}\cdot{\frac{N_1}{N_1-N_2}}^{-4}-I = 0.00000$



$$\sqrt{\frac{N_1-N_2}{N_2}} = 1.42482$$

$$\frac{N_1}{N_1-N_2} = 1.49258$$

$N_1 = 3.99177$

$N_2 = 1.31737$

$A = 1.42482$

$B = 2.12666$

$C = 3.17422$

$D = 4.73779$

$E = 7.07155$

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1}{N_1-N_2}^{0} - A = 0.00000$$

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1}{N_1-N_2}^{1} - B = 0.00000$$

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1}{N_1-N_2}^{2} - C = 0.00000$$

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1}{N_1-N_2}^{3} - D = 0.00000$$

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1}{N_1-N_2}^{4} - E = 0.00000$$

$F = 0.95460$

$G = 0.63956$

$H = 0.42849$

$I = 0.28708$

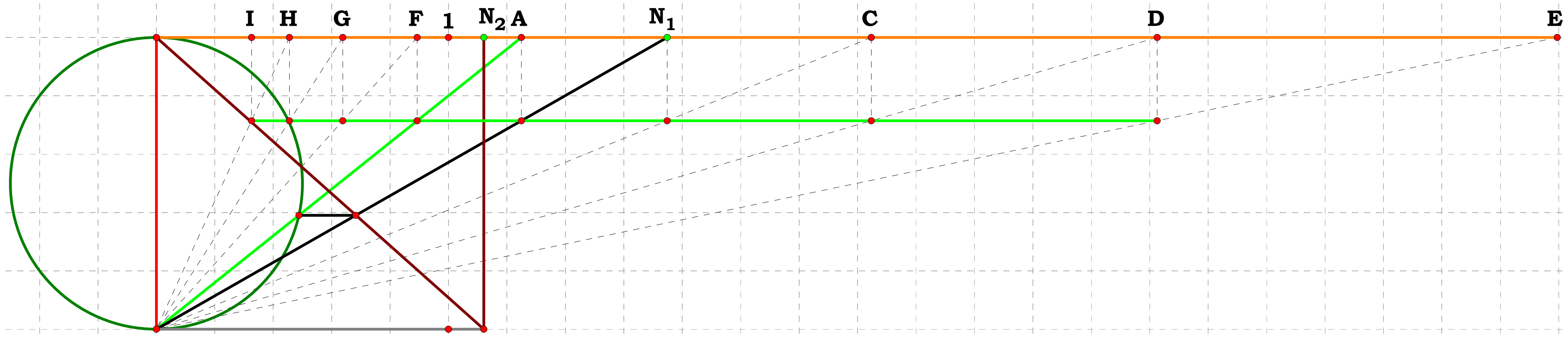
$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1}{N_1-N_2}^{-1} - F = 0.00000$$

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1}{N_1-N_2}^{-2} - G = 0.00000$$

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1}{N_1-N_2}^{-3} - H = 0.00000$$

$$\sqrt{\frac{N_1-N_2}{N_2}} \cdot \frac{N_1}{N_1-N_2}^{-4} - I = 0.00000$$

Topic Divider.



$\sqrt{\frac{N_1}{N_2}} = 1.24930$

$\sqrt{N_1 \cdot N_2} = 1.39967$

$N_2 = 1.12036$

A = 1.24930

$N_1 = 1.74861$

C = 2.44748

D = 3.42566

E = 4.79479

$\sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{0} - A = 0.00000$

$\sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{1} - N_1 = 0.00000$

$\sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{2} - C = 0.00000$

$\sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{3} - D = 0.00000$

$\sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{4} - E = 0.00000$

F = 0.89257

G = 0.63770

H = 0.45561

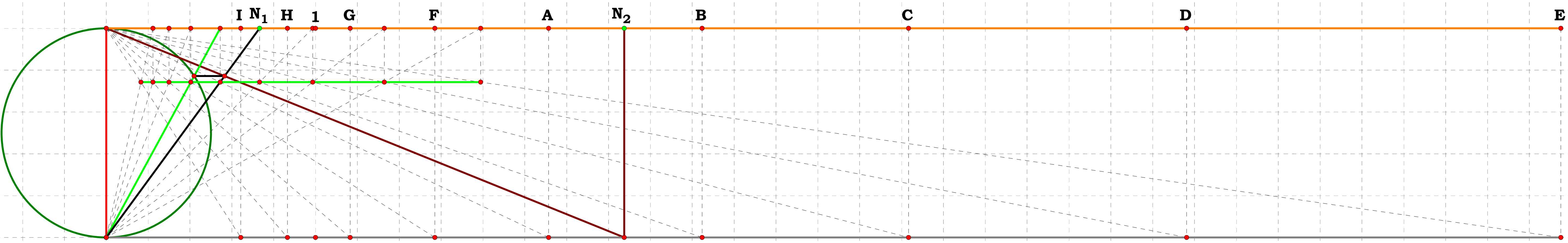
I = 0.32551

$\sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{-1} - F = 0.00000$

$\sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{-2} - G = 0.00000$

$\sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{-3} - H = 0.00000$

$\sqrt{\frac{N_1}{N_2}} \cdot \sqrt{N_1 \cdot N_2}^{-4} - I = 0.00000$



$$\frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} = 2.11403$$

$$\sqrt{N_1 \cdot N_2} = 1.34658$$

$N_1 = 0.73268$

$N_2 = 2.47486$

$A = 2.11403$

$B = 2.84670$

$C = 3.83331$

$D = 5.16185$

$E = 6.95084$

$$\frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^0 - A = 0.00000$$

$$\frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^1 - B = 0.00000$$

$$\frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^2 - C = 0.00000$$

$$\frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^3 - D = 0.00000$$

$$\frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^4 - E = 0.00000$$

$F = 1.56992$

$G = 1.16586$

$H = 0.86580$

$I = 0.64296$

$$\frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^{-1} - F = 0.00000$$

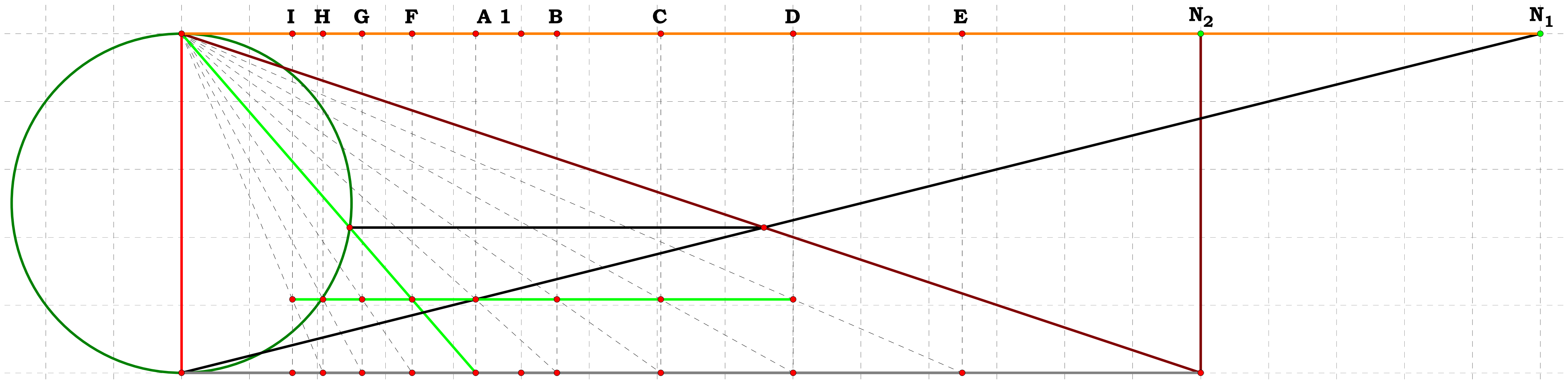
$$\frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^{-2} - G = 0.00000$$

$$\frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^{-3} - H = 0.00000$$

$$\frac{N_1}{\sqrt{N_1 \cdot N_2 - 1}} \cdot \sqrt{N_1 \cdot N_2}^{-4} - I = 0.00000$$

N[1] -> 0
N[1] -> 1
N[1] -> 2

N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11
N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11
Hide Action Buttons



$\sqrt{\frac{N_2}{N_1}} = 0.86603$

$\frac{B}{A} = 1.27633$

$N_1 = 4.00000$

$N_2 = 3.00000$

$\frac{N_2}{N_1} = 0.75000$

A = 0.86603
B = 1.10534
C = 1.41078
D = 1.80063
E = 2.29820

$\sqrt{\frac{N_2}{N_1}} - A = 0.00000$

$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B}{A} - B = 0.00000$

$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B^2}{A} - C = 0.00000$

$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B^3}{A} - D = 0.00000$

$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B^4}{A} - E = 0.00000$

F = 0.67853
G = 0.53162
H = 0.41652
I = 0.32634

$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B^{-1}}{A} - F = 0.00000$

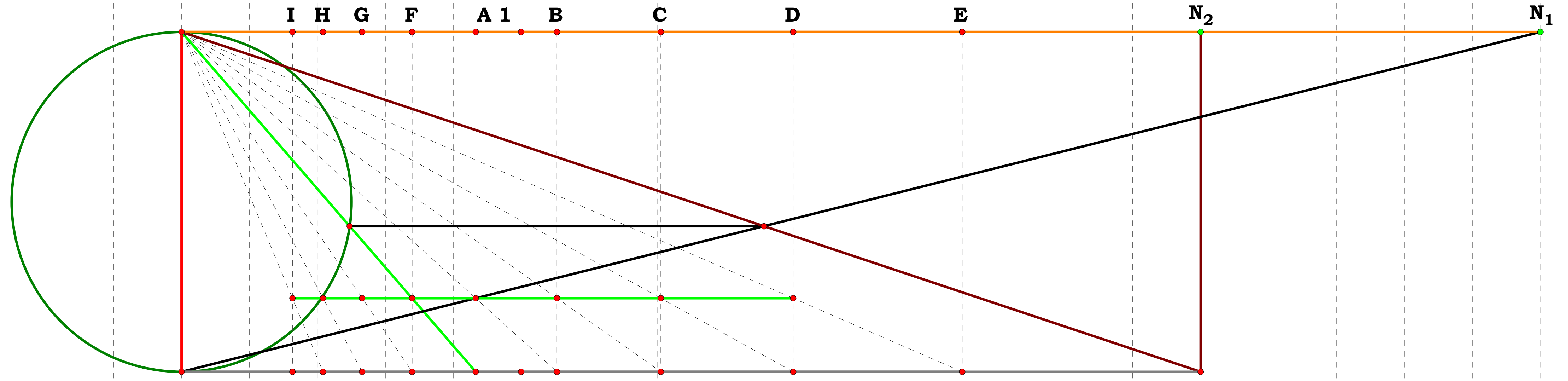
$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B^{-2}}{A} - G = 0.00000$

$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B^{-3}}{A} - H = 0.00000$

$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B^{-4}}{A} - I = 0.00000$

N[1] -> 0
N[1] -> 1
N[1] -> 2

N[1] -> 3
N[1] -> 4
N[1] -> 5
N[1] -> 6
N[1] -> 7
N[1] -> 8
N[1] -> 9
N[1] -> 10
N[1] -> 11
N[2] -> 0
N[2] -> 1
N[2] -> 2
N[2] -> 3
N[2] -> 4
N[2] -> 5
N[2] -> 6
N[2] -> 7
N[2] -> 8
N[2] -> 9
N[2] -> 10
N[2] -> 11
Hide Action Buttons



$\sqrt{\frac{N_2}{N_1}} = 0.86603$

$\frac{B}{A} = 1.27633$

$N_1 = 4.00000$

$N_2 = 3.00000$

$\frac{N_2}{N_1} = 0.75000$

A = 0.86603
B = 1.10534
C = 1.41078
D = 1.80063
E = 2.29820

$\sqrt{\frac{N_2}{N_1}} - A = 0.00000$

$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B}{A} - B = 0.00000$

$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B^2}{A} - C = 0.00000$

$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B^3}{A} - D = 0.00000$

$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B^4}{A} - E = 0.00000$

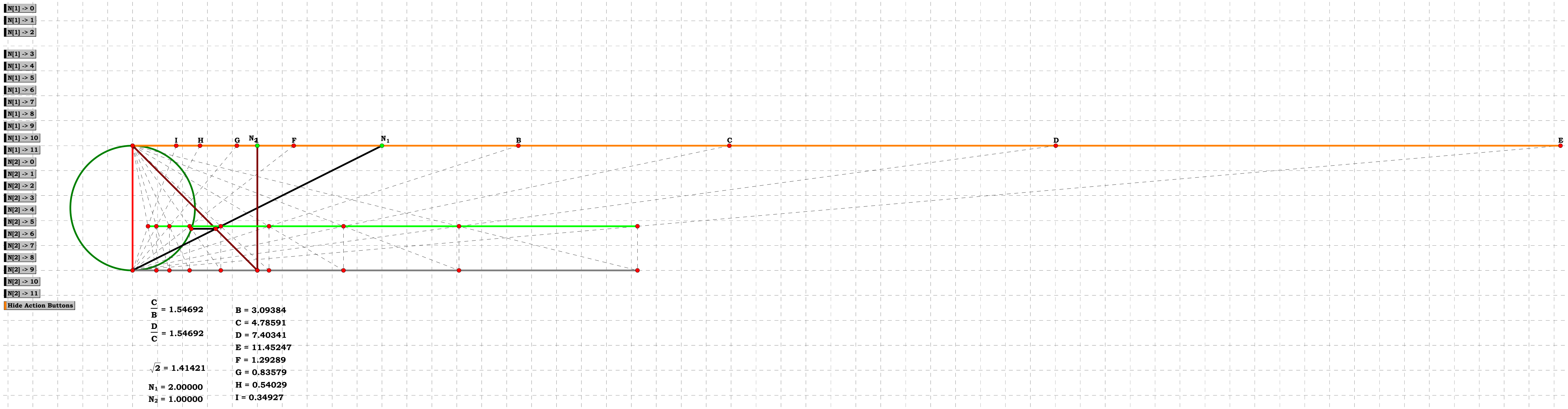
F = 0.67853
G = 0.53162
H = 0.41652
I = 0.32634

$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B^{-1}}{A} - F = 0.00000$

$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B^{-2}}{A} - G = 0.00000$

$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B^{-3}}{A} - H = 0.00000$

$\sqrt{\frac{N_2}{N_1}} \cdot \frac{B^{-4}}{A} - I = 0.00000$



$\frac{C}{B} = 1.54692$

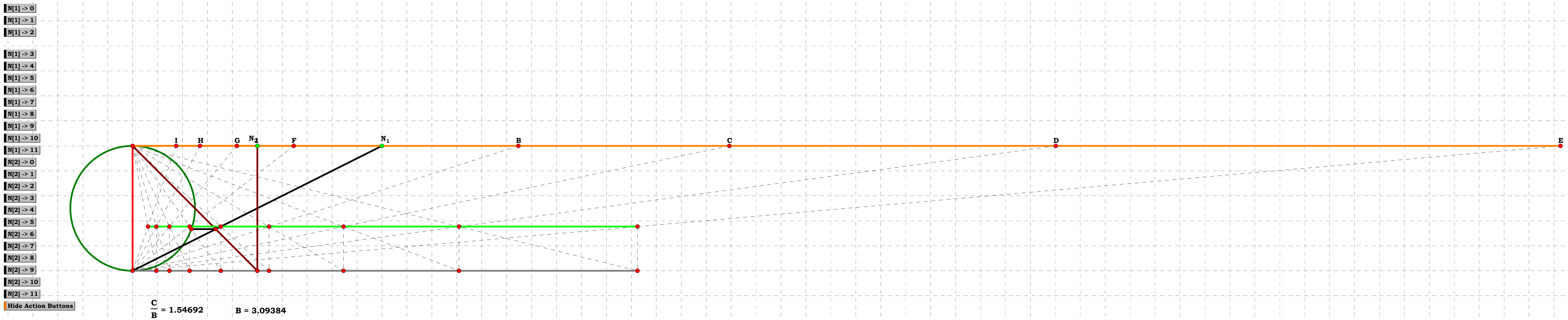
$\frac{D}{C} = 1.54692$

$\sqrt{2} = 1.41421$

$N_1 = 2.00000$

$N_2 = 1.00000$

B = 3.09384
C = 4.78591
D = 7.40341
E = 11.45247
F = 1.29289
G = 0.83579
H = 0.54029
I = 0.34927



$\frac{C}{B} = 1.54692$

$\frac{D}{C} = 1.54692$

$\sqrt{2} = 1.41421$

$N_1 = 2.00000$
$N_2 = 1.00000$

B = 3.09384
C = 4.78591
D = 7.40341
E = 11.45247
F = 1.29289
G = 0.83579
H = 0.54029
I = 0.34927